

OLDEST BEE PAPER IN AMERICA

THE AMERICAN BEE JOURNAL

ESTABLISHED IN 1861

DEVOTED EXCLUSIVELY TO PROGRESSIVE BEE CULTURE.

Vol. XVIII.

Chicago, Ill., October 4, 1882.

No. 40.

THE AMERICAN BEE JOURNAL

Published every Wednesday by

THOMAS C. NEWMAN,

EDITOR AND PROPRIETOR.

925 WEST MADISON ST., CHICAGO, ILL.

At \$2.00 a Year, in Advance.

Any person sending a club of six is entitled to an extra copy (like the club) sent to any address desired. Sample copies furnished free.

George Neighbour & Sons, London, England, are our authorized agents for Europe.

Postage to Europe 50 cents extra.

Entered at Chicago post office as second class matter.



The Road to Success.

In confirmation of the policy inaugurated by the BEE JOURNAL, and our persistent advice concerning the effect of apicultural societies and bee and honey shows on the bee-keeping industry, Prof. Cook, in a recent letter, says: "Local societies and big honey exhibitions are the ways to progress, now. Keep these ideas before the people." The following is the platform which we have been advocating for years, and the correctness of which is being indorsed by the most intelligent and progressive apiarists:

1st. Encourage planting bee-pasture, that there may be, every season, a crop of honey to gather, and making apiculture a fixed occupation.

2d. Fostering District and Local Societies to afford mutual instruction, and strengthen fraternization.

3d. Instituting large and attractive honey and apiarian exhibits, to educate the community to the desirableness and economy of a superior product.

4th. Cultivating a discriminating domestic market, to encourage superiority and excellence.

5th. The sale at all times, and in all places, of an honest article under an honest name.

We expect to give the proceedings of the National Convention in next week's BEE JOURNAL, so that our readers may be fully informed concerning all that will have been done or discussed at this important gathering of the bee-keepers of America. We hope the future meetings will not be held so early in the month

of October; we think a week or so later would be a much better time, after the bees are all prepared for the coming winter.

The National Convention.—We give up a large portion of our space this week to some of the essays which will be read and discussed at the National Convention. As we present a number of copies to the Convention for the use of those in attendance, they will be enabled to read each essay in advance, and note points for discussion, or follow them, as they are being read, and mark portions for future inquiry. This method of proceeding will overcome many previous objections urged against essays at Conventions, and greatly add to their usefulness.

Carelessness in our correspondents often causes us much trouble. We have an order for books which contains neither the name of the writer, his postoffice, County or State. All we can do is to wait until he gets sufficiently vexed at not receiving them to write us again, and then, should he give us his name and address, we can fill the order; if he should still think we ought to know him without this formality, and neglect to give us any clue to his personality or residence, we must wait until he gets "mad" enough to do so. As the time for the usual winter rush of correspondence is nearing, let us try to impress on our correspondents the necessity of being careful in the matter. Also, if they live near one postoffice and get their mail at another, be sure to give the address we have on our list.

We have made arrangements whereby we can procure tickets for those desiring to attend the National Convention, and return, good for 30 days, for \$12.00.

TOPICS PRESENTED THIS WEEK.

Editorial—

Editorial Items.....	625
The Road to Success.....	625
The National Convention.....	625

Convention Essays—

President Cook's Address.....	626
Experiments with Bees.....	626
Bees Voiding Dry Feces.....	626
Summer Experiments.....	626
What, then, are the so-called Dry Feces?.....	627
Do Imago Bees Eat Pollen?.....	627
Pollen as Winter Food.....	627
Do Bees Breed without Pollen?.....	627
Comb an Expensive Article.....	627
Experiments in Comb-Building.....	627
Control of Fertilization.....	628
Chaff Hives in Winter.....	629
Advancing the Science of Apiculture.....	630
Comb vs. Extracted Honey.....	631

Convention Notes—

Local Convention Directory.....	632
Central Michigan.....	632
The National Convention.....	633
Convention Notices.....	633

Selections from Our Letter Box—

Washington Bower.....	633
Quizzical.....	633
Extraordinary.....	633
Quantity and Quality Excellent.....	633
Hanging Frames.....	634
Meaning of Terms.....	634
A Continuous Season.....	634
Queen Overlooked.....	634
Do Bees Spread the "Yellows"?.....	634
Crop Reports.....	634
Removing Colonies.....	634
Finishing Up.....	634
Swarming.....	634
Bitter Honey.....	635
Condramm.....	635
Working Nicely.....	635
Honey-Dew.....	635
Most Remarkable in 30 Years.....	635

The American Agriculturist has been much improved, and is a handsome monthly; published by Orange Judd Co., New York.

For the American Bee Journal.

THE NATIONAL CONVENTION.**President Cook's Address.**

[This and the five following addresses will be read and discussed at the National Convention, to be held at Cincinnati, O., commencing Oct. 3, 1882.—Ed.]

Experiments with Bees.

There are several points in the habits and economy of bees, concerning which scientists and practical bee-keepers are not all agreed. Some of these are not without practical importance. In the researches and experiments which I now describe, I have aimed to settle definitely some of these mooted questions.

Bees Voiding Dry Feces.

The late M. Quinby, who, as a practical bee-keeper, had few if any superiors in our country, taught during the latter part of his life, that bees to winter well required heat to evaporate the moisture from their feces, which in health would be passed in a dry state in the hive. Last winter in an article in the *Rural New Yorker*, I called this theory in question, stating that I had yet to find evidence that it was correct. Mr. N. N. Betsinger in an article before the N. E. Bee-keeper's Association at its last meeting said: "The atmosphere outside the cluster should not fall much below 60°, and with these conditions the excrement will be discharged in a dry state." Mr. E. Gallup, in *Gleanings in Bee-Culture*, May, 1882, p. 233, says that he has "often seen bees discharge the contents of their abdomens, which was powdery-like," though this was not in the hive but as the bee flew forth on the snow, and was about to die. Mr. C. N. Abbott, editor of the *British Bee Journal*, says that he is "amused that there should be any uncertainty in this matter." He says that "if bees are sent some miles on the cars, where they have room to fly in the box, any one may see the dry excreta." He has "seen hundreds of cases where there have been thousands of grains of bee excreta, about the size and color of coarse gun powder."

Lastly I quote the noted agricultural editor of the Province of Ontario, Mr. W. F. Clarke, who is "quite certain that bees void dry feces." He says in the *AMERICAN BEE JOURNAL*, vol. 18 p. 374, "when we have discovered the conditions under which bees discharge dry feces only, we shall have solved the problem of successful wintering."

To ascertain the truth in this matter, I first examined the alimentary canals of scores of bees which were taken from the hives in the cellar, just before setting them out in the spring. These bees had wintered exceptionally well, and if Mr. Quinby was correct, were just the ones to show the dry feces. According to Messrs. Gallup and Betsinger, these bees should hold

in their intestines the dry excrement. In every case I found no sign of the dry powder, but the semi-liquid mass, containing grains, probably pollen, which I have ever found in such dissections. The intestinal excreta of bees I find to be very much the same at all times; the principal difference being in the number and size of granules and in some cases a more rank odor.

I next took all the material that was on the bottom board of a colony which had wintered so well that there were very few dead bees in the hive, to Dr. Kedzie, and asked him to report the character of the contents. The result of the analysis gave 75 per cent. wax, the remainder consisting of sand, and parts of dead bees. Prof. Beal and I gave the same material a careful microscopic examination, and though we found the powder-like grains, referred to by Mr. Abbott, their character was not such as the appearance of the feces would lead us to expect, in case they were fecal masses. I examined these very carefully, and in almost every one I found compound hairs, just such as are found on the bodies of bees, and which I have never found in the intestines of bees. In some cases I did find that there was considerable matter that did not melt as does wax, and which seemed to contain pollen, but the form of these masses, and the fact that hairs were embodied in them, leads me to conclude that they originated in the same way that the similarly formed wax pellets did, with which they were associated, and of which they often formed a part. Where the bees had wintered well, and there was no sign of dysentery, there was not the least fecal odor to this mass on the bottom board beneath the bees. After a full examination, I became so thoroughly convinced that this mass was not at all fecal in its origin, that I put large bunches of it into my mouth and chewed them, to find in every case a nearly tasteless, wax-like gritty substance, with no possible taste to hint of a fecal origin. The grit is easily accounted for as sand will blow into the entrance of the hives in the autumn. Prof. Beal and I saw these sand-grains with the microscope, and Dr. Kedzie met the same in his examination.

Summer Experiments.

During the months of June and July last, I experimented with three different colonies of bees, at three different times, as follows: I shut them in, so that they could not fly, and gave them clean hives, well ventilated with nothing in them but the empty frames, though in one case I added foundation. The bees were left in this condition for two or three weeks, and each colony fed daily from one to three pounds of the best granulated sugar, reduced to a syrup by adding 8 lbs. of water to 10 lbs. of the sugar. The hives were empty of combs, save as the bees built them, and so the bees had a chance to fly in the hive, and in the middle of the day, as the heat would become great, they would be irritated very much like they would if

carried on a journey. The hives were covered with wire gauze which was painted green. At the close of the experiment in each case the bottom-board was covered with the powder-like grains, which all of my large class of students pronounced at once to be the droppings of the bees. There is no wonder that the gentlemen above referred to have been deceived. To one acquainted with fly specks, there would be no doubt in regard to their nature, until he gave the subject close scientific examination. All of these masses contain wax, bee-hairs, and many of pieces of wood, quite large grains of green paint which they had cut from the wire gauze, some of which were semi-cylindrical; and in one case where there was a piece of cotton cloth in the hive, long cotton fibers. Some of the wood splinters were still attached to the hive, and yet surrounded with the pellets, the hairs winding around the wood. In all of these cases the entrances to the hives were closed with common wire gauze, and in every case there was a small windrow of these pellets just outside the gauze.

Now that these were any of them fecal pellets, notwithstanding their appearance, is entirely disproved. Careful dissection of scores of bees found the same semi-liquid mass referred to above, thick with pollen grains, which in one case Prof. Beal identified as pollen grains of the pine, with no sign of bee hairs, paint particles, or wood splinters. Secondly, many of these pellets had incorporated in them cotton fibers, wood splinters, and paint masses that could not have gone through the intestinal canal of the bees. Thirdly, the bees could not possibly have discharged their feces outside the entrance, through the wire gauze, as seen in the little windrows. Lastly, if the masses, which embraced the wood-splinters, passed through the bees, the slivers must have done so as well, but these were attached to the hive, by one end, and so if they passed through the alimentary canal of the bees the hive must have borne them company; which, notwithstanding the great achievements of bees, will hardly be credited even by the most credulous. I am much indebted to Prof. W. J. Beal and one of my students, Mr. W. M. Badcock, a very careful and painstaking young man, both of whom have given this subject careful investigation, and feel certain that the masses cannot be fecal.

I will further state that in a few cases I found real feces in the hive. These, consisting of dried pollen grains, were strung out in a row, and in every case there was a stain by the side of the mass, indicating their original semi-liquid condition in which the fresh feces are ever found. These masses were like the intestinal excrement, and not at all like the so-called fecal masses described above. There is no doubt but that bees, if long confined in their hives are irritated, either by too great cold or too great heat, or continual disturbance as by jarring, will have to void their feces, and, if they cannot fly out, they will

discharge these excreta in the hives; but these will never be dry, but always semi-liquid.

What, Then, Are the So-Called "Dry Feces."

Mr. Badcock suggested that they might be masses of refuse which the bees had packed in their pollen baskets, which gave rise to the peculiar form. But the fact that some of these were wound around attached splinters, makes this explanation untenable. It must be that bees knead together, by means of their jaws, the wax, the hairs that they collect in dragging dead bees, and other refuse, which they have occasion to cut away or remove. I cannot explain why they thus waste so much good wax, unless they find that their jaws, like the seamster's thread, work better if waxed.

Do Imago Bees Eat Pollen?

The question is often raised by writers on bees, whether the mature bees eat pollen. It is well known that bees will winter just as safely, and probably with more certainty, if they have no pollen. In fact bees do just as well if wintered solely on sugar syrup, which is a pure hydrocarbon and entirely destitute of nitrogenous material, which all honey contains, in the slight amount of pollen gathered with it. It has been suggested that as bees are very active, and so must expend considerable muscular energy, the albuminoids are indispensable in their food. The fact that we always find abundance of pollen in their alimentary canals proves that bees do eat it, and that all does not go to feed the young bees or brood. The fact that we find so much pollen in the rectum, would show that this pollen is not very well digested by the imago.

Pollen as a Winter Food.

Some of our ablest bee-keepers think that eating too much pollen during their confinement in winter, may give rise to dysentery, and cause the fatality so much dreaded by beekeepers. Careful experiments, which I have carried on for several years, give support to this view. No one can doubt but that dysentery comes from over-distended intestines. As we have seen, the excreta of bees consist largely of pollen grains. Reason would sustain the argument from experience, that bees without pollen in the hive might winter more safely. Surely if the bees were induced to eat much of the pollen it could but act disastrously, as we have seen that much is left undigested.

Do Bees Breed without Pollen?

It is often asserted that bees can rear brood without pollen. This is certainly a mistake. In all the cases tried this summer, and several similar ones previously tried, I have failed signally to secure any brood. If fed honey there might be some brood reared, as bees collect some pollen in the honey, but when I have fed pure sugar, I have signally failed to rear brood. By opening the hives just at night and inserting a comb containing pollen, I at once secured brood. I have for several years put a portion of

our bees in the cellar, each season, to winter, with the combs of pollen carefully excluded from the hives. Such never contain brood in the spring as I set them out, while the others often do. Some of our apiarists report differently, which I cannot understand.

Comb an Expensive Article.

Mr. Langstroth, the great Huber of America, states in his classic work on the Honey Bee, that it takes from 13 to 20 lbs. of honey to feed the bees while they secrete one pound of wax. My experiments, were it not that the bees were in a very abnormal condition, show that wax is even more expensive. The chemical composition of wax, which is much like that of fat, makes it easy to understand how bees can secrete it on a diet purely of the hydrocarbons.

Agricultural College, Lansing, Mich.

For the American Bee Journal.

Experiments in Comb Building.

PAUL L. VIALLO.

To ascertain the quantity of honey or sugar required to build 1 square foot of comb, and the quantity of honey required for 1 lb. of wax, the following were my experiments:

I took the bees from two colonies, putting them in two empty hives, and confined them in a room arranged for the purpose. I gave them nothing but water for 2 days, so that I would be certain they would have used all the honey taken during the shaking and brushing into the empty hives. In two cases during my experiments I had to feed after 12 hours, as they showed signs of starvation. Before feeding, I took care to cut out and scrape all the combs they had made. The hives were numbered 1 and 2, the bees weighed every time, so as to always have as much as possible the same amount of bees. No. 1 contained 5¾ lbs. and No. 2, 5½ lbs. of bees.

Fed No. 1 with 2 lbs. of brown sugar made into syrup, and No. 2, with 2 lbs. of white sugar, also made into syrup. No. 1 gave 167 square inches of comb and No. 2, 68 square inches. I reversed the feeding, and No. 1 gave 77 inches, and No. 2, 148 inches. I fed both with 2 lbs. of honey, and got from No. 1, 55 inches, and from No. 2, 48 inches. The 55 inches of comb, including all scrapings, weighed 2¼ ounces, and its average thickness 1¼ inches. Judging from that, it would take 14 lbs. of honey (without pollen) to make 1 lb. of wax.

By taking the average, it would take about 2 lbs. of brown sugar, 4 lbs. of white sugar, and nearly 6 lbs. of honey to make 1 square foot of comb of an average thickness of 1¼ inches. But as the combs obtained were thicker than those generally built naturally, we may safely reduce the above quantities ¼ to ½ per cent. Now, as we know from analysis that honey contains from 45 to 50 per cent. of grape sugar, we may account for the difference of results between sugar and honey, and I am certain that in a flow of nectar that more inches would be

built and more wax secreted from the same amount of saccharine matter, as nectar is composed of 55 to 60 per cent. of cane sugar and contains no grape sugar. Having no grape sugar, I could not experiment on it so as to see if bees would build combs with it only. I have repeated these experiments several times with but slight variations.

As the above experiments were made without pollen, I went over the same with pollen, and the result was a gain of about 15 per cent. in inches and quantity of wax. In each experiment I changed bees so as to always have old and young, and always had the queen with the bees. I would also state that it was not always the colony containing the most bees which gave the most wax, and on one occasion using a smaller hive, 3¾ lbs. of bees gave about the same result.

During the above experiments I had a chance to observe the eggs laid by the queens, which they would do moderately as the combs were built, and noticed that when fed with sugar the eggs were removed by the bees; in one instance a few remained in the cells and seemed to be dead, nearly as soon as hatched; with the honey a few eggs would hatch, but the young worm would be invariably removed in 2 or 3 days. This living of the worm was due, I suppose, to the small quantity of pollen contained in the honey, as, after diluting the honey and filtering it, the result was the same as with sugar. I went so far as to give them a frame containing eggs and larvæ one day old, taking care that there was not a grain of pollen, and continued the feeding with honey, and in 24 to 30 hours all the eggs and larvæ had been removed by the bees. After several other trials with negative results, I collected some pollen from some combs and gave it to them during the feeding, and in every case the eggs hatched and the worms went through all the ordinary phases and hatched perfect bees, and I came to the conclusion that without pollen or a substitute, no brood was reared. In all these operations, I always had some water in the hive.

As these experiments were made in confinement, I intend to repeat those in regard to the quantity of honey required to make 1 pound of wax in the open air, as soon as there is no flow of nectar from the field, though there is always a little; but I will place another hive with the same amount of bees on a scale and watch if there is any honey coming in during the experiment, and deduct the difference. If it was possible to obtain enough nectar, I am certain that the result would be the same as with brown sugar, and that not more than 5 or 6 lbs. of honey is required to make 1 lb. of wax. I believe that in the open air the bees will give more wax, as being at liberty they will work with courage.

In these experiments, you will see that some of the feed is stored in the cells, and the feeding must be pushed a little further, and when the combs are removed, they must be weighed with the little honey in them, these

washed and re-weighed after they are dried, and the amount of honey deducted, etc., from the amount fed.

You will excuse me if I do not enter into more minute details, but I think that you will fully understand how the experiments were made, and that you will be able to repeat them, and I hope your results will corroborate mine. Do not be afraid to ask for more details, as I am at your service, and will cheerfully give them.

Bayou Goula, La., Sept., 1882.

For the American Bee Journal.
Control of Fertilization.

G. W. DEMAREE.

Bee-keepers of America have just cause to feel proud of the progress already made in the science of breeding, and the manipulation of bees, yet they have cause to feel humiliated that one of the chief factors that go to make up the conditions of scientific breeding has, thus far, eluded the grasp of the most studious and careful of our apiarists. I refer to a more perfect control of the males or drones in the process of mating.

Every other important problem pertaining to the science has been solved by the combined wisdom of the fraternity, but before this dark mystery we stand as helpless as so many infants.

It is admitted by all intelligent breeders, no matter what may be the peculiar views of each as to the most profitable "strain" or breed of bees, that careful selection is essential to successful breeding. It is an easy matter to control the stock on the side of the mother bee, both as to the "strain" or type sought to be perfected, and the individual specimens best qualified to transmit the qualities sought for in breeding. But with our present knowledge no such control can be had over the males or drones. It is true that much may, and has been done by resorting to isolated localities where the queens can meet no other drones than such as the apiarist keeps in his own yard, but this can only give general control. It places the apiarist as a breeder but little above the shepherds of thousands of years ago whose flocks bred promiscuously, regardless of the weak and the strong.

It is claimed that the males can be controlled in breeding by the use of all worker combs, by which means such drones as are not desirable may be suppressed. All this looks feasible, but a philosophical question arises here as to what will be the tendency of such a course. All will admit that the instincts of bees leads them to rear more or less of drones even in worker combs, and these dwarfed specimens will go forth to propagate the race, and thus take the place of properly developed specimens. It is not hard to foresee the evil effects that must ultimately follow such a course.

These dangers, however, can be averted to a good degree by allowing each colony a few square inches of drone cells to satisfy their yearning

for drone progeny, and remove the necessity of rearing dwarfs for the want of full-sized cells.

The frame which contains the drone cells should be marked so that but little time need be lost when it is desirable to clip the heads of the drones with the honey knife.

The genuine "innocence" of some who write on the subject of "purely mated" queens is calculated to provoke a smile on the part of those who have given the subject careful attention. Those who expect to have their queens mated with the drones reared by a few select colonies in their own apiaries, when situated in a locality where there are other bees, simply deceive themselves and those who "bite" at their advertisements. Situated as I have been for years past I could give facts enough to show the utter unreliability of such a course in breeding.

It requires concert of action on the part of those who keep bees in any locality to insure uniformity of mating even as to "stripes," as some interested breeders sneeringly put it. I wish to repeat here what I have said somewhere in my writing, viz.: That "an inferior specimen of a superior race is not necessarily better than a superior specimen of an inferior race." I think this is a fact that will hold good under all circumstances. Hence, if the honey bee is not an exception to all the rules known to the breeders of live stock, why, then, to have perfect control, the breeder must be able to select not only the race or "type" to breed from, but such specimens of the race or type as in his judgment are best qualified to transmit the qualities sought to be established in his ideal bee. By careful application of these rules our stock breeders have been able to surprise the world with their wonderful achievements. But I undertook to write this essay in order to relate some experiments which I have tried the past season in my researches for a method to control fertilization, and this I do with the hope that although they were failures as to the main object in view, they will not be altogether unprofitable and uninteresting. After trying many experiments to induce queens to mate in confinement with utter failures, it occurred to me that if some device could be invented which would allow the workers to pass out into the open air and at the same place permit the queen and drones to pass into an apartment prepared for them, and fly voluntarily, the conditions would conform so nearly to Nature's method that there would be hopes of success. To carry out this plan I made a box 18 inches square at the top by 18x2 inches at the bottom, and 12 inches deep, thus giving a box—when set on legs for a support—with three perpendicular and one sloping side, which last answered as a sloping bottom to the box. On top of this box was set a "tent" the same size of the top of the box and 12 inches deep, made like a square "show case." The sides of the tent were covered with paper cambric, and the top with the thinnest crape I could get. A common nucleus

hive was fastened against the perpendicular side of the box opposite to the sloping side, and its entrance was made to connect with a "covered way" through the narrow part of the box at the bottom of the angle. At the termination of the "covered way" two saw cuts were made so as to admit a perforated tin plate to answer as a queen and drone excluder. The covered way was so arranged that the worker bees could pass out through the perforations in the tin plate, and when the covered way was uncovered on the inside of the tent, the queen and drones being excluded from passing out through the slots in the tin, could rise and fly in the tent. Having matters arranged in this way, I stocked the nucleus hive in the usual way, except I fitted a piece of drone larvae just ready to hatch in one of the combs, and 24 hours afterward I gave the nucleus a matured queen cell. The drones were hatching continually, and I "sorted" them, carefully removing such as did not come up to my standard of "the best." There were about two dozen of them when culled.

When the drones were four or five days old they began to come to the entrance, and seeing the light above, they made no effort to pass out through the holes in the tin, but rose and flew lively in the tent. I watched them with much interest, fearing that they would not know how to return when their frolic was over, but in this there were no grounds for fears; they could pass from the entrance to the tent and back again as friskily as if under no restraint whatever. Thus far things looked flattering, and I waited for the queen's turn to try her skill. On the evening of the fifth day of her age she came out and flew with pomp and splendor in the tent, the soft walls and roof of the tent were but little in her way, and she seemed to enjoy life hugely. She was able to return without the least confusion. The first day she made six trials in the tent, all the while from a half dozen to a dozen drones were flying with her, and they waltzed around in the gayest fashion. Day after day the queen and drones sported in the tent together, as though they had not the remotest idea that they were males and female, and old enough to get married. She waltzed out two sets of drones, and kept up her flights till 20 days old and then gave it up. At 30 days old, she began to lay eggs and laid sparingly for two or three days and died.

The second experiment was much like the first as to the flights of the queen in the tent. She kept up her flights with the drones till she was 18 days old. On the evening of the eighteenth day of her age I opened a valve at the top of the tent and let her out; she was gone but a short time and returned, but in a few minutes she came out again and disappeared into space; the result was that in just 30 minutes from the time she was first let into the open air she returned with the evidence of having met a drone, and in a little over two days after she was laying. She lived only about a week after she commenced to

lay. Now let us see what the results of these experiments indicate. Both of the confined queens had sisters of the same age of themselves, and these were laying rapidly and had sealed brood, while the confined queens were flying day after day in the tent, surrounded by as gallant a band of drones as could be selected. The confined queens were on the wing from one to two hours each day for 12 or 14 days, without showing the slightest signs of excretion or substance adhering to the extremities of their abdomens, thus disproving Ulivi's theory. One of the confined queens flew 12 days in the tent right among the drones, without "mating," and when set at liberty found a mate in 30 minutes.

The experiments showed that the vitality and endurance of the queen exceeds that of the drone many times over.

They further show that retarded fertilization is injurious to the queen, and when long delayed proves fatal to her existence. The excessive rainy weather made it inconvenient to pursue the experiments further this season, but I hope to take them up in the future. By means of the invention above described, I hope to control, in a good measure, the mating of specimens to breed from. I discovered, and hope to take advantage of it, that the queens in confinement, when of the proper age to meet the drones, become exceedingly anxious and desperate to escape their imprisonment, and will fly quite late in the evening, after all the drones have retired. The drones confined with the queen will keep up their clamor for liberty long after the other drones have retired for the day. With this state of things under our control, it will be seen that by giving the imprisoned queen and selected drones liberty to fly after other drones have retired, will, as nearly as possible, insure select mating.

Christiansburg, Ky., Sept., 1882.

For the American Bee Journal.

Chaff Hives in Winter.

O. O. POPPLETON.

As my idea of essays at a Convention, is that they are intended more as a basis for discussion than as an elaborate treatment of the subject, I will confine myself to what I consider the advantages and disadvantages of chaff-hive wintering, over other methods, and a few ideas suggested by my experience with them.

I want to say at the outset, and emphasize it, too, that I find a proper management during the honey season is just as necessary a factor in successful wintering, as is the mode of wintering itself; but this part of the subject I will not attempt to consider.

Chaff-hives have now been in quite general use for four or five years, and reports of their success or failure are conflicting. I have used them exclusively for seven winters, and the largest loss I have had any one of those winters has been about 5 per cent., while the average loss has been

less than 3 per cent. These losses are net ones, after both wintering and springing.

I find wintering in chaff-hives possesses the following advantages over other methods:

1st. They admit of being prepared for winter as soon as the honey season closes, before severe cold weather sets in.

2d. When once prepared for winter, they require little or no attention until spring. This is quite an advantage as it allows us to turn our entire attention elsewhere for four or five months of each year.

3d. It requires less labor to prepare bees for winter, than by any other mode.

4th. The sun cannot warm up the inside of hives so readily as it can single-walled hives, thus inciting the bees to flight when the air is too cold for them to do so safely. I think all can see the advantage of this, especially during the fall and spring.

5th. The inside of the hives are readily accessible at all times during the winter, when weather is warm enough to allow bees to be handled.

6th. They thoroughly protect bees from the effects of changeable weather during the spring months. This is by far the most important advantage of all, and, as I said at the National Convention last fall, "this one thing alone in my opinion amply pays for their extra cost." The spring of 1882 was a marked example of the truth of that opinion. Several of my neighbors, who winter their bees in cellars, have told me that they were troubled exceedingly during the spring and early summer with chilled brood, while I do not know of having lost a single cell of brood from that cause. I am so thoroughly satisfied of the value of this advantage, that I hazard the prediction that a score of years hence, the most successful wintering will be accomplished by the uniting or blending the use of chaff-hives and cellars, or by the use of more thoroughly arranged chaff hives than we now have.

7th. They prevent spring dwindling. This is also a marked and important advantage. I have no trouble in saving colonies that possess a good queen and a pint of bees at the commencement of pollen gathering.

8th. They are valuable helps in building up nuclei and weak colonies all through the season. I think all experienced bee-keepers will see the value of this, especially during such a season as the present one has been.

9th. They seem to prevent a too early commencement of brood-rearing, which is considered by some of our ablest apiarists to be one great cause of spring dwindling. My observations are that bees in chaff-hives do not commence rearing brood until they can fly quite freely in the spring; but after once commencing to breed, their more even temperature allows them to do so more rapidly than in single-walled hives.

Their disadvantages are:

1st. Their extra cost. This is quite an item, but not a serious one to those who make bee-keeping a regular busi-

ness. Such are forced to have the best hives and appliances they can procure.

2d. Their large size and weight makes them unhandy to move about in the apiary. This is a serious objection to those whose system of management requires the frequent moving of hives, and who have no extra help convenient. To me this has been a very small objection.

3d. The difficulty of getting into the hives in the spring, on account of having to remove loose chaff. This objection applies only where loose chaff is used for packing, and is entirely obviated by the use of chaff cushions.

I have long been of the opinion that, other things being equal, the manner of wintering that best prevents the accumulation of dampness in the hive, will be the most successful. I regard this as the prime object to be attained by any method. Those colonies which come through best, almost invariably come through with dry bees, dry combs and dry packing, and this is especially true with bees in chaff-hives. Almost any kind of chaff, properly prepared, makes an ample protection from the cold; but I find quite a difference in different kinds about their liability in holding dampness. I have used timothy, wheat, oats and buckwheat chaff, and prefer them in the order named. Am now using timothy chaff exclusively.

My experience leads me to give the following suggestions in regard to the use of chaff-hives:

1st. Pack as early in the fall as possible. I have noticed that colonies packed before severe weather sets in do the best.

2d. Leave packing on as late in the spring as possible. This is very important. I never take any packing off until the middle of May, and not then unless colonies get very strong.

3d. Use the finest, lightest chaff you can get, and have it freed as much as possible from straw, etc. As I said before, I use timothy chaff, and am very particular to free it from straw by sifting it.

4th. Use a thickness of at least 4 or 5 inches of chaff on the sides and top of hives. The chaff at sides of my hives is a little over 5 inches thick, and if I was to change the thickness of the chaff at all, I would increase instead of diminishing it.

5th. Thoroughly protect the bottom of the hive as well as the top and sides. I know that this advice is directly opposite to the practice adopted by some who winter very successfully, but my own careful observations lead me to advise as above.

6th. Wherever possible, use chaff cushions instead of loose chaff. If one has only a few colonies, this is not so important; but it is almost impossible to handle the bees in a large apiary when packed in loose chaff—at least I find it so on our windy prairies. I now construct my hives with double walls in front and rear, which are permanently filled with loose chaff, using cushions at each end and one on top. These cushions can all be removed in an instant of time when

desiring to perform any manipulation of the hive, and can be quickly replaced. It is a very tedious job packing and unpacking bees with loose chaff every fall and spring, and I do not think any large bee-keeper will attempt it more than once.

7th. Have as much empty space as possible inside the hive and outside the packing, and in no case allow the top of the hive to rest directly on the packing. I use very large hives with from 2 to 5 cubic feet of empty space, and have frequently noticed that those hives having the largest amount of this empty space, usually keep the dryest.

8th. Crowd bees on as small a space as possible. I winter my strong colonies frequently on 7 combs, and never more than 8, my frames being of about the same capacity as the Langstroth frames.

9th. Crowd the packing as close up to the bees as possible. The less empty space there is inside the packing, the more equal can the bees keep the temperature.

10th. Have winter passages through all the combs. I consider this very important with any mode of out-door wintering.

In conclusion I want to say, that while I do not consider the method of wintering in chaff-hives to be the best one under all circumstances, and for all bee-keepers, I do think that the longer it is practiced, the more favorably will it be thought of. If my cellar was a suitable one, I should experiment with the putting of some thoroughly packed hives in it during the winter, thus combining the advantages of our two principal methods of wintering. I hope some of our wide-awake bee-keepers, who are more favorably situated than I am, will make some thorough experiments in this direction.

Williamstown, Iowa, Sept., 1882.

For the American Bee Journal.

Advancing the Science of Apiculture.

J. E. POND, JR.

The science of apiculture is still in its infancy—a healthy babe if you please; still its growth has been hardly commensurate with its years, but with careful nurture and right management it will eventually become a giant.

The advent of frame hives formed an era in this occupation, which before that time was considered of little account, except among a few specialists, causing it to be classed among the sciences, and to become a certain success in the hands of any one who will devote brains and labor to it. The old box-hive management was largely a matter of luck, even among those of the largest experience, but with frames, pecuniary profit is sure and certain with those who understand the business, and beginners, even, can, by their aid, manage an apiary without loss, and with a fair chance to realize a profit. All honor, then, to the Rev. L. L. Langstroth, for what he has done for apiculture in

giving us the movable frame. His works will follow him, and his memory be held dear in the hearts of bee-keepers long after his frail body lies moldering in its mother earth, and bee-keepers, generations hence, will bless his name for making the management of the hive so simple and so easy. But why has not that advancement been made in bee-keeping since the era of the frame, that its advent seemed to warrant? I do not wish to be understood as assuming that no advancement has been made since that time, but I do assert that such advancement has not been made as ought to have been, or might have been, had our bee-keepers been a little less selfish, and actuated with a desire to benefit humanity as a whole, rather than themselves individually. To be sure, there has been but little encouragement given to any one who earnestly desired to progress. Attempts in that direction have either been "damned with faint praise," or died for want of sustenance. New ideas have been frowned upon, and new theories, especially if they seemed to combat old foggy principles (which were the natural result of the box-hive and brimstone style of management) were either looked upon as innovations, and condemned without a trial, or else strangled at birth by the cord of self-sufficiency. Even the inventor of an acknowledged good thing was not allowed to receive the reward he so justly merited, but attempts were at once made either to decry the merits of the invention, or to avoid payment for the same, by adopting some device which, when used in connection with it, was supposed to dodge the claim of the inventor, even though admitted to be anything but an improvement.

In all ages such has been the case with improvements, and in apiculture no less than any other. No one is willing to accept a new thing at first, or drive his wheels out of the old ruts, no matter how clumsy the old or how rough the road, but when the new device has won its way to favor, a host of imitators at once arise, and while they are not willing even then to acknowledge the merits, they are ready to adopt the principles, claiming that the additions or changes they have made are the chief, if not the only causes, of its success. As in hives and other supplies, so in matters relating to the honey bee itself. It took years to learn the economy of the hive, the duties of queens and workers, and the use of the drones; and even these facts were not discovered till poor blind Huber set himself to the task. Parthenogenesis was scouted as being at variance with the laws of nature, and even now there are found those who still insist the Dzierzon theory is an impossibility.

The advent of the Italian bee was an immense advantage, for its coming and adoption was the means of settling forever many mooted questions, and of our learning many things that heretofore were hidden mysteries, and had our bee-keepers even then striven as hard to gain a knowledge of the bee itself as they did to make it a

pecuniary profit to themselves, we should have progressed much farther than we now have.

The invention of foundation and the extractor (both foreshadowed by Langstroth years ago) were long strides forward, and their tendency has been to make uncertainty certain, and a barely paying business largely remunerative. Why is it, then, with all our past and present advantages, that we have made no greater progress? Other occupations, which a few years ago possessed far less prospects and advantages, have outstripped us in the race, and have gained a world-wide reputation, and become a means, rather than an auxiliary, in gaining a competence. Why is it not so with apiculture? The questions do not seem hard to answer, and I propose to briefly give my views in regard to them.

Bee-keepers, as a rule, are not entomologists, and entomologists, as a rule, are not bee-keepers, and bee-keepers have not taken that pains they ought, to give enough study to entomology to enable them to know the general peculiarities of the bee. In days past, and largely even now, bee-culture was, and is used, simply as an auxiliary to agriculture, and while considered profitable, was only so because the bees boarded themselves and required (at least received) no care. If they gave a yield of surplus well and good, if not, their owners let them die out, saying, "I never did have luck with bees." Even those who adopted it as a business simply engaged in it for the profit to be derived from it without knowing aught or caring aught, save for the mechanical part of its management. No time was given to the study of the characteristics of the bees themselves, and no thought given to the business, except to reckon up the gain or loss at the close of the season. Occasionally some one better posted than his neighbors would attempt some experiments which seemed to him conducive of good results, and endeavor to get his neighbor to follow his lead, but he was only laughed at for his pains, and driven from his position by railery and ridicule. If a scientist gave a view or opinion at variance with old-fashioned notions, it was at once said, "What does he know about it, he is only a book man? We have kept bees for 40 years in the good old way of our fathers, and he can't tell us anything about it." Prejudice and superstition have prevented progress in many directions, and in apiculture as much, if not more, than in any other, and until we divest ourselves entirely of such prejudice, learn that this is a progressive age, and that we, even well-informed though we are, have yet much to learn, we shall grope in the darkness of self-conceit, and never see the light of progress and improvement. No one need fear the results of experiments or discussions. Truth is immutable, and will live through countless ages. Although experiment and discussion may seem to disprove some of our pet ideas, upset some of our cherished fancies, and prove us in the wrong, the truth itself can never

be successfully assailed, and though falsehood and error may, for the moment, seem to be in the ascendant, "truth, though crushed to earth, will rise again," and triumphantly assert and maintain its position against all odds, and falsehood and error be buried so deep as never to be resurrected. From ages long gone by till now it has been easy to write, but it is too often the case that those who know the least of a given subject are the first to write upon it; so with apiculture. Many who are actuated by a desire simply perhaps to see themselves in print, write a plausible article, the only merits of which are its finely turned sentences, and fully rounded periods. Others with axes to grind, for the purpose of turning an honest (?) penny; others still, actuated it would seem with no motive other than to deceive, put themselves before the public. All of these would do no harm if the readers were beekeepers of experience; but, unfortunately, these articles are read by many who have just commenced keeping bees, and to a great extent look for information from the articles they read in their bee papers. They are taken, and taken in by them, and when they find out the falsity and incorrectness of them, they at once denounce all writers, and those who are striving to give correct information are looked upon as humbugs and swindlers as well as the other class mentioned, and the result is that apiculture receives a blow from which it takes a long time to recover.

There is a remedy, and one that will give the occupation a new impetus and tend to advance it to the position it ought to occupy. It remains with us, however, to adopt and apply the remedy, and no matter if it is somewhat caustic and burns our self-conceit, we must vigorously apply it till the sore is healed, and a cure effected. That remedy is, for us to study the business in all its bearings, and particularly the habits and peculiarities of the honey bee. State nothing as facts until fully proven; give theories as theories only, and the reasons for accepting them, but until fully backed up by carefully conducted experiments, state them as theories still. Write for your special journals and write often, but do not be guilty of writing unless you have something to write about; state results briefly and the causes which led to them, and always give a full account of unsuccessful as well as successful experiments. Be ready at all times to amicably discuss any matter in which your own opinion is not accepted by others as correct. Do not hastily adopt a new thing because it is new, and, above all things, do not hastily condemn a new thing before fully understanding it. Avoid personalities in discussion, whether written or spoken, and, as earnest thinking men, do all that in you lies to advance the cause in which you are engaged and which you so fondly love. Thus will the science of apiculture be made to advance and take its proper place among the legitimate means of support in the world, and become a

source of mental discipline and pecuniary profit. Consider the honey bee not simply as a means of gain, but as a wonderful instance of God's goodness and kindness to man, who created the world and all therein contained for this his own glory and man's comfort and pleasure. "Go to the bee (ant), consider her ways and be wise," remembering that he who gave the honey bee its wonderful instinct (almost allied to reason) is the Creator of us all, and that from him only can we obtain support and sustenance, and from what we learn of the wonders of the created, learn to look with love and reverence to him, the Creator. Attend the Conventions to which you are sent as delegates, not simply with the idea of having a good time and making pleasant and agreeable acquaintances, but go there as men who have a purpose to attain, a duty to perform, and in its attainment and performance be actuated solely by a desire to aid, assist and encourage all steps that may be taken to forward the interest of apiculture. Work with head and heart for the interest of the whole; frown upon error, and heartily cheer for the right; do not resolve the Convention into a scandal shop, or form it into a mutual admiration society, but give to all their just due, and encourage progress, no matter from whence it originates; respect the opinions of others, even when they clash with your own, and by argument instead of sarcasm, strive to carry your own points. Let your points be for the general good, and not for a selfish purpose only.

Thus shall we make apiculture a noble profession, and cause it to proudly hold up its head among other occupations, and become a power in the land.

Foxboro, Mass., August, 1882.

For the American Bee Journal.

Comb vs. Extracted Honey.

DR. C. C. MILLER.

Shall we work for comb honey, and how shall we get the most of it?

I don't believe much in essays for Conventions, but as the President of the National Convention has honored me by asking me to write on the above subject, I cheerfully make the effort, especially as the subject is one which is to me intensely interesting, and I hope something in the essay may provoke discussion. If there is discussion, I know I shall learn something from it.

Practically, I answer the first part of the question by saying that I have this season taken fifteen thousand pounds of honey, and my extractor has stood untouched the whole summer. This answer is, however, only for the present time; for changes are so constantly taking place that another year may make extracted honey the most profitable for me to raise. The answer is also only for myself. For many others I am satisfied it is better to extract all honey. Not 50 miles from where I live is a man who sells thousands of pounds of extracted honey at

the highest price which can be obtained for comb. That man would be foolish to raise comb honey in preference to extracted. Under the present condition of matters, probably each producer must decide for himself which kind will yield the most net profit. A few years ago I raised extracted honey exclusively, and I may be allowed to give some of the reasons why I now prefer to raise comb honey. So long as I had only enough honey to supply the home market, I could sell extracted for about the same as comb, but having now a larger apiary, I am obliged either to ship to the large cities, or spend a good deal of time in developing a larger field as my home market. I think this latter course would take a good deal of my time through the winter, and at that time of the year I want something of a vacation. Moreover, if I sell extracted to the best advantage in a home market, I must spend no little amount of time and labor constantly getting it ready in small packages for retailing. If I ship to the large cities I can ship in bulk the extracted, and be easily rid of it, but a glance at the quotations frightens me from such a course. Comb honey is quoted about double the price of extracted, and I do not believe I can raise twice as much extracted as comb. Possibly, if I had a smaller number of colonies I might. I think one person can take care of a larger number of colonies run for comb than for extracted honey. Then all my fixtures and arrangements are at present for comb honey, and without the prospect of decided gain, I should not want to change. On the whole, looking honestly at the whole ground, I do not think I have made out so strong a case but that I might be induced to change upon being better informed as to the best way of raising extracted honey, or upon a sufficient advance in the price of the same, and I expect to see the price constantly approximate toward that of comb honey. But just at present I hardly expect to use the extractor more than enough to supply my own table, for a good article of extracted I believe to be best for the consumer.

Coming now to the second part of the question, how shall we obtain the most comb honey? If some years of practice, together with lying awake nights studying over the question, may fit one to answer it, then I may certainly lay some claim to be the right man. But candidly, I don't know. If a trip to the Cincinnati Convention will give as full an answer to the question as I desire, I shall feel well repaid for the journey, even if I have to make it on foot. The question is a very general one, covering pretty much the whole field of bee-keeping, involving a large number of other questions, to some of which I may briefly allude. Among the first, comes the question as to the best bees; a question I do not feel competent to discuss, and one which has been much discussed already in our papers. I do not, however, believe that the best bees for business will be had by getting queens from the best strain, and then breeding from them indiscrimi-

nately from year to year. Each year I find some colonies that are slow about building up, and make poor work all through the season. Often I have waited for them, hoping each week they would do better, until the harvest was past, obtaining from them perhaps not half the average yield. A colony which lags behind and fails to fill up when all conditions are favorable, should have its queen promptly killed and replaced by a better. A colony which is much crosser than the others should have its queen replaced, for cross bees cannot be so rapidly handled, an important item toward securing the largest yield. This year my bees seemed unusually cross, in fact the crosser I ever had. In one instance a person was attacked with no apparent reason, who had not approached within 6 or 8 rods of the apiary, and followed to a distance of perhaps 15 rods more. I was sometimes stung when walking near the bees and not disturbing them at all. It seemed as if my whole apiary had become cross. I watched closely the deportment of each colony on being handled or approached, destroyed the queens of two that were especially vindictive, and in a short time the whole apiary seemed as gentle as ever.

The right hive, of course, has something to do with the yield, and each man knows what that is, for it is the one he has invented. I am one of the few unfortunates who have not invented a hive; I have not even laid our venerated friend Langstroth under everlasting obligations by improving his hive; therefore, I am no competent judge.

Then comes the question of side and top-storing, and leaving each one to his own favorite plan, I have tried to secure the advantage of both by putting a frame of brood into the super until the sections were well started. By shifting about this frame of brood, or by putting frames of empty sections between those well occupied, I try to get the bees well started early in the season on a large number of sections, and toward the close of the season limit them to as few as may do, by using division boards in the super.

Years ago, while blocking up the cover of a hive to allow a free circulation of air through the brood chamber, Adam Grimm said to me, in his earnest way, "I consider this very important." Since that time I have practiced shoving the super forward on the hive, leaving an open space of perhaps one-fourth inch for ventilation until all swarming was over.

It is hardly necessary to say that starters of some kind must be used, and I am strongly of the opinion that the largest yield requires the largest-sized starters. For 1 lb. sections I prefer starters at least $3\frac{1}{2} \times 3\frac{3}{8}$ inches in size. That which will be most rapidly used by the bees will of course be preferred. There have been such great improvements, that little seems to be desired in the way of foundation. Some beautiful thin Dunham, made by A. I. Root, delighted me this summer; but on the whole, I think I have never liked any foundation I have used quite so well as the Given,

made by Mr. Heddon. To get the largest yield, I imagine that the thinnest foundation must not be used, only so the base be thin.

I suppose swarming hinders the largest yield, and I do not know that I have any new thought as to the best plan to repress the swarming fever. I am especially unsettled as to what is the best disposal to make of swarms that do come. Will the combined wisdom of this Convention please inform me how I shall secure from a colony that swarms, as large a yield as if it had not taken into its head the notion to swarm at all?

Passing by other important items, I will only mention that of pasturage. With all the advantages of natural pasturage, I suspect that shortly beekeepers will wake up to the fact that their harvest may be extended by special planting to fill in the "gaps." The BEE JOURNAL will tell us to sow melilot, *Gleanings* will tell us figwort. Each one should try these and other good honey plants, gradually increasing the acreage as he finds what is most profitable in his particular locality. I have faith enough in this to believe that it will pay to devote some acres entirely to honey plants, and am anxious to learn the best way to get 5 acres in figwort, 5 in melilot, and to know if it will pay me to raise golden honey plant and spider plant.

This essay is quite too long, but our esteemed friend, the President, should have known to have chosen a smaller subject, or a larger man.

Marengo, Ill., Sept., 1882.

CONVENTION NOTES

Local Convention Directory.

1882. Time and Place of Meeting.
- Oct. 3-6—North American, at Cincinnati, O.
Dr. Ehrlich Parmlly, Sec., New York City.
 - 5—Kentucky Union, at Shelbyville, Ky.
G. W. Demaree, Sec., Christiansburg, Ky.
 - 7—Marshall County, Iowa, at Marshalltown.
J. W. Sanders, Sec., LeGrand, Iowa.
 - 10—Tuscarawas Valley, at Newcomerstown, O.
J. A. Bucklew, Sec., Clarke, O.
 - 10, 11—Northern Michigan, at Pewamo, Mich.
O. R. Goodno, Sec., Carson City, Mich.
 - 13—N. W. of LaCrosse, at LaCrosse, Wis.
G. J. Pammel, Sec., LaCrosse, Wis.
 - 17, 18—Northwestern, at Chicago, Ill.
C. C. Coffinberry, Sec., Chicago, Ill.
 - 18, 19—Southern California, at Los Angeles.
J. E. Pleasants, Pres., Anaheim, Cal.
 - 21—Northern Ohio, at Norwalk, O.
S. F. Newman, Sec., Norwalk, O.
 - Nov. 1—New Jersey & Eastern, at New Brunswick.
J. Hasbrouck, Sec., Bound Brook, N. J.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—Ed.

The bee-keepers of Boone Co., Ind., are cordially invited to meet at the office of Barton Higgins, in Lebanon, Oct. 9, at 9 o'clock, a.m., to complete the organization of the auxiliary County Bee-Keepers' Society. The bee-keepers of Hendricks county, Ind., are invited to be present. By request of the Committee.

For the American Bee Journal. Central Michigan.

The Central Michigan Bee-Keepers' Association held a meeting in the Capitol Building Sept. 19th, and was called to order by President Ashworth.

The first question discussed was the size and style of a building to exhibit bees, honey and apiarian supplies in. After a spirited discussion, a motion was carried by which a committee of three, consisting of Prof. Cook, President Ashworth and N. V. Goodno, all of Lansing, Mich., was appointed, to request the managers of the Agricultural Fair to erect a building suitable for the exhibition of bees, honey and apiarian supplies.

The President then called for an expression of opinion on the best methods of rearing queens. The topic was discussed by E. S. Vannetta, S. Hilbert, H. L. Denny and others. Mr. Denny said when rearing queens for his own use, he stimulated his best colonies to breeding early; so they would have drones flying before there were any other drones out.

A recess was taken until 2 p.m., when Pres. Ashworth being called away upon urgent business, Prof. Cook was called to the chair, and the meeting opened with a renewal of the discussion on the best methods of exhibiting bees, honey and apiarian supplies at the Fair.

Prof. Cook stated that he had this season a queen fertilized in the hive, he also stated that he had used foundation this season from nearly all the different makes of machines now in use, and his bees appeared to work equally well on it all, with no trouble from stretching or sagging except that made upon the Given press, and that he could do nothing with.

The next question was how many bees should be in a hive to winter well.

Mr. Wood, of Grand Ledge, wanted his hives full of bees when he put them in the cellar, and from 15 to 20 lbs. of honey. He usually fed some in the spring to stimulate early breeding.

Mr. Waldo, of Grand Ledge, and E. N. Wood, of North Lansing, preferred wintering out-of-doors on the summer stands.

S. D. Newbro exhibited a very ingenious device in the shape of tongs for lifting the brood frames from the hives, and to hold the combs while examining them; also a machine for fastening the foundation into the section boxes, and other articles.

Narmore & Wood exhibited their hives, section boxes, etc.

E. N. WOOD, Sec.

The fifth annual meeting of the Northern Michigan Bee-Keepers' Convention will be held at Pewamo, Ionia County, Mich., on the second Tuesday and Wednesday (10th and 11th) of October, 1882. Pewamo being on the D. & M. and H. & M. R. R., it will be accessible by rail. The members will do all in their power to make the meeting interesting.

H. M. ROOP, Pres.
O. R. GOODNO, Sec.

The National Convention.

The North American Bee-Keepers' Society will hold their 13th annual meeting at Washington Park Hall, Cincinnati, O., across Washington Park from the Exposition building. Time, Oct. 3rd to 5th, 1882. First session Tuesday, 10 a. m., Oct. 3. We are encouraged to hope that this will be a very profitable meeting, as we are promised papers from, and the presence of, a large number of our most prominent bee-keepers both in the United States and Canada, and essays and implements of the apiary are expected from abroad to add to the knowledge imparted by the research and inventive skill and methods of our countrymen.

EHRIK PARMLY, Sec.
New York, July 12, 1882.

The Northwestern Bee-Keepers' Convention will meet at Chicago, Ill., on Tuesday and Wednesday, Oct. 17 and 18, 1882. The office of the American Bee Journal has been kindly tendered as a place of meeting. A cordial invitation is extended to all bee-keepers, and especially those of the Northwestern States, to be present. The meeting takes place during the last week of the Inter-State Industrial Exposition, to enable all to obtain reduced railroad rates. First session at 10 a. m. C. C. MILLER, Pres.

C. C. COFFINBERRY, Sec.

The Union Bee-Keepers' Association of Maryland, Virginia and West Virginia, will meet at Hagerstown, in the room of the County Commissioners, at the Court House, on Wednesday, Oct. 18, 1882, at 1 o'clock, p. m., the session to last two days. The Washington County Fair will then be in progress, which will give persons an opportunity to attend the exhibition. All persons intending to go will please drop me a card, so that I may secure for them half-fare rates. J. LUTHER BOWERS, Sec.

The fall meeting of the Northern Ohio Bee-Keepers' Association will be held in Whittlesey Hall, Norwalk, O., Saturday, Oct. 21, commencing at 9 a. m. A full attendance is solicited, as it will be a meeting of more than usual interest. Principal subject for discussion: "How shall we winter our bees without loss?" S. F. NEWMAN, Sec.

The annual meeting of the Mahoning Valley Bee-keepers' Association will be held at Berlin Center, Mahoning County, in the town hall on Friday and Saturday the 19th and 20th of January, 1883. All bee-keepers are invited to attend and send essays, papers, implements, or any thing of interest to the fraternity. A full attendance is requested of all who are interested. In fact, the meetings will be so interesting that you cannot afford to miss them. We expect a lecturer from abroad on the evening of the 19th.

LEONIDAS CARSON, Pres.

The Marshall County, Iowa, Bee-Keepers' Association will hold its regular session at the Court House in Marshalltown on Saturday, Oct. 7, at 10 a. m. Subject for discussion, "How to prepare for wintering." We hope to have a good meeting.

J. W. SANDERS, Sec.

Vice President for Kansas.—Mr. D. P. Norton having peremptorily resigned, I hereby appoint Mr. S. J. Miller, of 314 Kansas avenue, Topeka, Kansas, as his successor to the Vice Presidency for Kansas of the N. A. B. K. Society.

A. J. COOK, President.

The Southern California District Bee-Keepers' Association will hold their annual Convention in Union Hall, Los Angeles City, Oct. 19, 20, 1882, during the week of the Agricultural Fair. The Convention promises to be of so much interest that no bee-keeper should miss it. Ladies are pressing invited to attend.

J. E. PLEASANTS, Pres.

The Tuscarawas Valley Bee-Keepers' Association will hold their next meeting in Wilgus Hall, Newcomerstown, O., on Tuesday, Oct. 10, instead of Oct. 5th. This change is made in order to allow members to visit the National Convention at Cincinnati.

J. A. BUCKLEW, Sec.

The N. W. Bee-Keepers' Association of La Crosse, will meet in the City Hall in La Crosse on Friday, Oct. 13, 1882. All interested are invited to be present.

G. J. PAMMEL, Sec.

SELECTIONS FROM OUR LETTER BOX

Washington Bower.—I send you a small piece of vine called Washington bower, which blooms from early spring till late in the fall. The bees work on it from morning till night, and on the blossoms two or three days old as well as on the new ones. I would like to have your opinion about whether it is very good for the bees or not? It is an ornamental vine, and many people have it running on their porches. Good luck to the BEE JOURNAL.

MARVIN M. BINKLEY.

Sherman, Tex., Sept. 23, 1882.

[We do not think bees work on Washington bower to any extent in the North—at least we have never been able to discover them on it. It is possible that in some latitudes, and under certain atmospheric influences, it may afford a bountiful supply of good honey, while under others it would not. We know that this is true of buckwheat, and perhaps many other plants.—ED.]

Quizzical.—Will you be kind enough to answer me two questions: 1. Would you advise a beginner in bee-culture to make artificial swarms or divide his bees for increase in the time of apple bloom without any regard to the state of the weather or condition of the colony? 2. If not, then, how could you advise Mr. J. M. Foote, of Creston, Iowa, as you did on page 587 of the BEE JOURNAL of Sept. 13, 1882? I know by sad experience that that is "bad medicine" for a beginner. Mr. "Heddon's system" is very nice for one who is backed up by a comb foundation and wire factory, providing the weather is fine and the bees are "booming" otherwise it is not advisable. Please rise and explain.

OLEFOGY.

Allendale, Ill., Sept. 26, 1882.

[1. We supposed when that advice was given that there was but one man in the country (yourself) who would be foolish enough to divide during apple bloom, or any other time, if the weather was not favorable, or the bees strong enough to divide with safety, and he had probably learned better by "sad experience."

2. We never advised the use of wired foundation in transferring, nor for other purposes, but we did advise the "progressive method of transferring," as pursued by Mr. Heddon.

Our correspondent is inclined to be quizzical, and in order to force a point, seems to assume that it is impossible to get good transferring weather during apple bloom, or to adopt Mr. Heddon's method without using his or a similar material.—ED.]

Extraordinary.—That honey wave is gone, except some coming in from asters. I commenced the season with 19 colonies, which have increased to 56, and have obtained 2,000 lbs. of comb and extracted honey, with as much more to take off. O, how they fight when I open a hive! I have tried the Italian and Cyprian side by side this season, and, all things considered, the Cyprians are the best; at least the cross between the two races is good enough.

WM. MALONE.

Oakley, Iowa, Sept. 22, 1882.

[Over 200 lbs. per colony spring count, and more than 150 per cent. increase. Who can beat it, averaging the apiary through? We have no doubt it has been done, but would like for them to "rise and explain."—ED.]

Quantity and Quality Excellent.—Our honey crop has been very good in quantity, and excellent in quality this season, although the honey flow came very late. August was the busy month with willing workers. Our fall honey crop is never so great as in some localities, as we have not the abundance of goldenrod.

WM. WAKEFIELD.

St. Paul, Minn., Sept. 22, 1882.

Hanging Frames.—Why are not small hanging frames used for surplus honey, or, if they have been used, what was found to be the objection? It seems to me their advantages would be great. We could see just what combs would do to take out at a glance and could take them out without in any way disturbing those that were not capped, or had brood in them. They would be filled more readily, as hanging immediately over the brood frames they would seem to be but a continuation of them, and practically there would be not the least obstruction to the bees getting up to them. I mean to have them of the same width of the brood frames, i. e., $\frac{3}{8}$ inch, and quite shallow, so that honey would naturally be stored there. Please answer in next issue of BEE JOURNAL.

G. M. ALVES.

Henderson, Ky., Sept. 21, 1882.

[The objection to their use would be the liability of the queen to make a brood-nest of the second story as well as the first. We have, the past summer, frequently seen three-story Langstroth hives, which were being manipulated for extracted honey, wherein several frames in the upper or third story contained brood, larvæ and eggs; and your device would be subject to the same annoyance. Of course this would depreciate the value of the comb honey produced in them if intended for a general market, as they would not only be more or less filled with pollen, but wherever young bees had been reared the combs would be discolored and unsightly.—Ed.]

Meaning of Terms.—Will you please tell me the meaning of the terms "foul brood" and "nuclei"? I am a novice in bee-culture, but the more I learn, the deeper I become interested.

JOHN L. VREDENBURGH.

Austin, Texas, Sept. 18, 1882.

[Foul brood is a malignant, contagious disease, which destroys the brood of a colony of bees. Nuclei is the plural of nucleus, and is used to denote a miniature colony of bees.—Ed.]

A Continuous Season.—The honey season is over with us. The drouth and frost have stopped the growth of all honey-producing plants. When I review the past 6 years, I am sure the present has been fully equal to the best. From about the 16th of June to the 15th of Sept., we have had one continuous flow of honey, with the exception of a day or two at a time. During this period we have had several honey-dews, which covered the leaves of the trees so thickly that it ran down and dropped from their points, besmearing one's clothing in passing through the timber. Frames of foundation placed in the middle of a colony with brood on each side would be drawn out and filled with honey before the queen could lay an

egg in them. On the 2d of Sept. I made two new colonies from 2 strong ones, giving each one frame of brood and one frame of honey, and filled out the hives with frames of foundation. On the 15th of Sept. I opened the hives and found that the foundation had been drawn out, filled with honey, and the most of it was sealed over. There was even less brood than when the colonies were made. Still, both queens were young and vigorous. The honey extracted during this time is very thick, and has a pleasant flavor. It is thought by some to be better than that taken while basswood was in bloom.

J. L. STRONG.

Clarinda, Iowa, Sept. 22, 1882.

Queen Overlooked.—I purchased a small lot of bees and added them to a colony; about 2 days afterward I found a queen on the ground near the hive. I looked at them, at intervals for about two weeks, finding no queen, but brood in various stages. I grafted in a queen cell, and next morning found a dead queen on the ground. 1. Why was this? From another colony I removed the queen. Eight or nine days after I caged an Italian queen on a frame having some brood, letting her remain 48 hours. Seven days after I could not find her, but later in the day noticed a cluster of bees on the outside of a screen to prevent robbing. I brushed the bees away, and there was my queen dead. 2. What was the matter? I have lost 6 fine queens in attempting to introduce them.

H. J. NORTHRUP.

Lansingburgh, N. Y., Sept. 18, 1882.

1. There was a queen in the small lot of bees you added, which was killed by the bees or queen in the hive, and which you overlooked afterward.

2. The robbing and confusion incident to the wire screen frightened the bees and queen, and in her efforts to abandon the hive, and their attempts to retain or protect her, she was killed.—Ed.]

Do Bees Spread the "Yellows?"

There is considerable agitation among fruit men in this State in regard to whether bees spread the yellows in peaches. Would like to hear from Prof. Cook on the subject. Bees are doing well here, and very strong.

T. O. SHEARMAN.

New Richmond, Mich., Sept. 14.

Crop Reports.—To date I have taken off 23,100 lbs. of extracted and 500 lbs. of comb honey from a commencement of 256 colonies. I expect to extract about 300 lbs. more. Mr. G. C. Vaught to date has taken off 3,045 lbs. of comb and 1,270 lbs. of extracted honey, and expects to take off 1,000 lbs. more of comb honey, all from a commencement of 39 colonies. Mr. Wm. McLendon, of Lake Village, Ark., whom I visited Aug. 20th, had extracted 7,500 lbs., and taken 110 lbs. of comb honey from a commencement of 70 colonies. Mr. Robert Adams,

near Lake Port, Ark., at the same date, from 3 colonies to commence with, had extracted 588 lbs., and taken 72 lbs. of comb honey. What the expectations of my Arkansas friends are I cannot say, but they are sanguine of a heavy yield. I will send you a report in full in the winter of all the apiaries in my neighborhood. The North American Bee-Keepers' Society meets in convention too soon for a full report from Southern bee-keepers.

O. M. BLANTON.

Greenville, Miss., Sept. 21, 1882.

Removing Colonies.—It is necessary to remove my colonies before I pack for winter, to a yard 200 feet distant. They must be taken from one place to the other direct. 1. What is the best manner to remove them? 2. When is the best time? 3. A good deal of drone comb is in the frames the bees are to winter on. What should I have done, and what can I do?

JAMES GARDINER.

Paris, Ont.

1. Carry them on a hand-barrow.
2. Remove them at once, slanting boards in front of each to cause them to mark their location anew.

3. If filled with honey, let them remain; if not, remove them when packing, or before.—Ed.]

Finishing Up.—On the morning of the 22d inst. we had a light frost, but at 2 o'clock p. m. the bees were working busy as ever. This morning a second and heavier frost occurred, which will stop bee-work to some extent. Bees have done well here this summer. I hope mild weather will prevail a few days to finish off unfinished combs. My crop will reach 4,000 lbs. from 48 colonies last spring.

T. N. MARQUIS.

Woodland, Ill., Sept. 24, 1882.

Swarming.—Seeing a statement written by Joel Brewer, and one from Daniel Whitmer, on page 555 of the BEE JOURNAL, moves me to write for their benefit, and others (if they wish to try it), my success for five years consecutively. When spring comes I commence to build up, and get large colonies to be ready for the honey season. If my colonies are not strong enough when that time comes, I double them until the desired strength is reached. Now comes the time to be on my guard. When one shows signs of crowding the queen, which will be when mock queen cells are being built rather plentiful, with here and there an egg placed in them, I procure another hive, and filling it with empty combs, place it under the colony. The vacant space being below, and heat always rising, the colony receives no injury from chilling. This method has never failed with me, and I can refer to 5 bee men besides myself who practice it with success. I use a hive 2 feet long and one foot wide, by 14 inches deep. The frame is 11x13 inches, outside measure, and I keep none but pure Italian bees. In five years' use of the above method, I have

never had a swarm issue, and I have had large colonies that filled three of these hives tiered one above another, always putting the empty one below. When extracting, I would take off the brood nest and extract the lower hive. I have procured hundreds of pounds from a single colony by this method. I never clip a queen's wing, and would as soon go visiting during the height of the honey and swarming season as any other time, for I feel that my bees are safe. I do not ask bee-keepers to take for granted what I say, but try one colony this way, being sure to prepare in time. W. S. BAIR.

Rollersville, O., Sept., 17, 1882.

Bitter Honey.—I observed in the BEE JOURNAL of Sept. 6, page 568, that E. P. Massey, of Waco, Tex., has some bitter honey from the wild camomile. I do not know whether it will act like the bitter honey from the tulip tree, or not. We often get that so bitter we cannot use it, but if kept 6 or 8 months the bitter taste has always left it. The sweet I suppose neutralizes the bitter. My bees are now and have been for some time doing well, for this country and time of year. They done well in the spring and fore part of the summer, then fell back and consumed nearly all of their stores and stopped breeding, until the plant I send you for name came into bloom, which was about 8 weeks ago, and some of which is yet in bloom. There was, I think, 1,000 acres of it within range of my apiary. My bees worked upon it until corn and other flowers came into bloom. I also send a second flower that grows here in great abundance, and blossoms in May and June. J. H. CHRISTIE.

Dyersburg, Tenn., Sept. 11, 1882.

[The first of the flowers is *Rudbeckia fulgida*, one of the purple cone flowers. This is a Southern species, scarcely reaching farther north than Kentucky. Grows on dry soil.

The second, *Penstemon digitalis*, is a beautiful plant, related to many of our showy cultivated flowers, among others the snapdragon. It is also southern in habitat, from Virginia and Southern Illinois downward. The whole group to which it belongs (*Scrophulariaceae*) are prominent honey plants.—T. J. BURRILL.]

Conundrums.—I had a swarm of black bees June 9th, and hived them in a hive full of empty combs, putting on 21 prize boxes, and have now taken from them 35 pounds of honey. They are now, however, changed to pure Italians without introducing any queen to them. How did it happen? I sent for 2 Italian queens and introduced them to black colonies, which are also changed to Italians. The first queen was introduced July 3d, and swarmed on the 14th, and that colony swarmed on Sept. 3d. It was a very large one, and was hived on one frame of empty comb and 9 frames of wired foundation. They are very strong and heavy; I think

the bees and honey will weigh 25 or 30 pounds. 2. Do you think they will winter safely? WM. ROBERTS.

Vaughansville, O., Sept. 23, 1882.

[1. Either the swarm did not come from a black colony, or an Italian queen has by some means gained ingress to the hive, and destroyed the black queen.

2, If well supplied with matured young bees and 25 or 30 pounds of good honey, we do not know why they should not winter as safely as any. The weather since Sept. 3d has been excellent for breeding.—ED.]

Working Nicely.—The weather is warm at this time, and bees are working nicely on goldenrod. If the weather continues warm a few days longer I shall have to extract to make room for the queens. R. DOWNS.

Naugatuck, Conn., Sept. 20, 1882.

Honey Dew.—Inclosed find some beech leaves, which I obtained from the woods near here, and of which there is a great abundance in the same condition. Is the sticky substance on these leaves the so-called honey-dew, or what is it? There were no bees on them at the time I found them, which was late in the afternoon.

S. P. NEWMAN.

Norwalk, O., Sept. 15, 1882.

[It is undoubtedly the same. There are times, and when gathered may have been one of them, when this substance does not possess the same sweetness as at others, and hence was not liable to attract the bees.—ED.]

Most Remarkable in 30 Years.—The season in this section for bee-keeping has been the most remarkable I have known in my 30 years' experience. Bees came through the winter in fine condition, but when they went abroad for honey they found the flowers scarce, and what few there were sequestered but little honey. Where large lots of bees were kept together, they had to be fed up to July 4th, and in some localities should have been fed later. Swarming was very light, as in the yard that I worked, containing 150 colonies, only about 40 swarms, and all were returned but 2. The small crop of honey that I obtained (3,000 or 4,000 lbs.) came from basswood, and was gathered in less than a week. All have a good supply for winter, which has been gathered from fall flowers. In some sections in this county bees are in a starving condition, and some large apiaries do not number one-half what they had in the spring. As the question of how to winter bees is one of the most perplexing in bee-keeping, I will at some future time give the readers of the BEE JOURNAL my method, which has never failed in 20 years with large lots, whether hot or cold. I have not time to give it now, but will say that all that is necessary is a warm cellar.

IRA BARBER.

DeKalb Junction, N. Y., Sept. 23.

THE AMERICAN BEE JOURNAL

ADVERTISING RATES.

20c. per agate line of space, each insertion.

A line of Agate type will contain about eight words; fourteen lines will occupy 1 inch of space. Transient Advertisements payable in advance. Special Notices, 50 cents per line.

DISCOUNTS will be given on advertisements published WEEKLY as follows, if the whole paid in advance:

For 4 weeks.....	10 per cent. discount
" 8 ".....	20 " "
" 12 " (3 months)....	30 " "
" 16 " (4 months)....	40 " "
" 20 " (5 months)....	50 " "
" 24 " (6 months)....	60 " "

Discount, for 1 year, in the MONTHLY alone 25 per cent., 6 months, 10 per cent., 3 months, 5 per cent., if wholly paid in advance.

Discount, for 1 year, in the SEMI-MONTHLY alone, 40 per cent., 6 months, 20 per cent., 3 months, 10 per cent., if wholly paid in advance.

Advertisements withdrawn before the expiration of the contract, will be charged the full rate for the time the advertisement is inserted.

THOMAS G. NEWMAN,

925 West Madison Street, Chicago, Ill.

Special Notices.

The American Express Company money order system is the cheapest, safest and most convenient way of remitting small sums of money. Their rates for \$1 to \$5 are 5 cents; over \$5 to \$10, 8 cents. They can be purchased at any point where the company have an office, except Canada, and can be made payable at any one of the company's 4,000 offices.

For safety, when sending money to this office get either a post office or express money order, a bank draft on New York or Chicago, or register the letter. Postage stamps of any kind may be sent for amounts less than one dollar. Local checks are subject to a discount of 25 cents at Chicago banks.

Premiums.—Those who get up clubs for the Weekly BEE JOURNAL for one year, will be entitled to the following premiums. Their own subscription may count in the club:

- For a Club of 2,—“Bees and Honey,” in paper.
- " " 3,—an Emerson Binder, or “Bees and Honey,” in cloth.
- " " 4,—Aplary Register for 50 Colonies, or Cook's Manual, paper.
- " " 5,—Cook's Manual, in cloth, or the Aplary Register for 100 Colonies.
- " " 6,—Weekly Bee Journal for 1 year, or Aplary Register for 200 Col's.

Two subscribers for the Monthly will count the same as one for the Weekly, when getting up clubs for the above premiums.

The Monthly Bee Journal for 1883.

At the request of many who have heretofore taken the Monthly and Semi-Monthly BEE JOURNAL, we shall next year print a Monthly consisting of 32 pages, issuing it about the middle of each month, at \$1.00 a year, in advance; 2 copies for \$1.80; 3 copies for \$2.50; 5 copies for \$4.00; 10 or more copies at 75 cents each. An extra copy to the person getting up a club of 5 or more.

The Weekly is now permanently established, and will be continued as heretofore.

The Weekly and Monthly BEE JOURNALS will be distinct papers, each having its own sphere of operation and different readers.

We shall aim to make the Monthly BEE JOURNAL a welcome and profitable visitor to the homes of those who feel the need of a cheap, first class, reliable bee paper in pamphlet form—whose time is too much occupied to read a weekly, or whose means or requirements are more limited, and who can dispense with the routine matter more properly belonging to a weekly.

Emerson Binders—made especially for the BEE JOURNAL, are lettered in gold on the back, and make a very convenient way of preserving the BEE JOURNAL as fast as received. They will be sent, post-paid, for 75 cents, for the Weekly; or for the Monthly, 50 cents. They cannot be sent by mail to Canada.

Our new location, No. 925 West Madison St., is only a few doors from the new branch postoffice. We have a telephone and any one in the city wishing to talk to us through it will please call for No. 7087—that being our telephone number.

Do not let your numbers of the BEE JOURNAL for 1881 be lost. The best way to preserve them is to procure a binder and put them in. They are very valuable for reference.

Bee Pasturage a Necessity.—We have just issued a new pamphlet giving our views on this important subject, with suggestions what to plant, and when and how. It is illustrated with 26 engravings, and will be sent postpaid to any address for 10 cents.

New subscribers for the Weekly BEE JOURNAL for 1883, can obtain all the rest of the numbers for this year by sending \$2 to this office.

CLUBBING LIST.

We supply the **American Bee Journal** and any of the following periodicals, one year, at the prices quoted in the last column of figures. The first column gives the regular price of both. All postage is prepaid by the publishers.

Publishers' Price. Club	
The Weekly Bee Journal.....	\$2 00..
and Gleanings in Bee-Culture (A.I. Root) 3 00..	2 75
Bee-Keepers' Magazine (A.J. King) 3 00..	2 60
Bee-Keepers' Instructor (W. Thomas) 2 50..	2 35
The 4 above-named papers.....	4 50.. 4 00
Bee-Keepers' Exchange (Houk & Peet) 3 00..	2 80
Bee-Keepers' Guide (A.G. Hill).....	2 50.. 2 35
Kansas Bee-Keeper.....	2 60.. 2 40
The 7 above-named papers.....	6 30.. 5 50
The Weekly Bee Journal one year and	
Prof. Cook's Manual (bound in cloth) 3 25..	3 00
Bees and Honey, (T. G. Newman) " 2 75..	2 50
Binder for Weekly, 1881.....	2 85.. 2 75
Binder for Weekly for 1882.....	2 75.. 2 50
The Monthly Bee Journal and any of the	
above, \$1 less than the figures in the last column.	

Honey as Food and Medicine.

A new edition, revised and enlarged, the new pages being devoted to *new* Recipes for Honey Medicines, all kinds of cooking in which honey is used, and healthful and pleasant beverages.

We have put the price of them low to encourage bee-keepers to scatter them far and wide. Single copy 6 cents, postpaid; per dozen, 50 cents; per hundred, \$4.00. On orders of 100 or more, we print, if desired, on the cover-page, "Presented by," etc., (giving the name and address of the bee-keeper who scatters them). This alone will pay him for all his trouble and expense—enabling him to dispose of his honey at home, at a good profit.

Articles for publication must be written on a separate piece of paper from items of business.

The BEE JOURNAL is mailed at the Chicago Postoffice every Tuesday, and any irregularity in its arrival is due to the postal employees, or some cause beyond our control.

Constitutions and By-Laws for local Associations \$2.00 per 100. The name of the Association printed in the blanks for 50 cents extra.

When changing a postoffice address, mention the *old* as well as the new address.

Ribbon Badges, for bee-keepers, on which are printed a large bee in gold, we send for 10 cts. each, or \$8 per 100.

Hundreds of clergymen, doctors and others have used Kendall's Spavin Cure with the best success.

37w4.

Honey and Beeswax Market.

OFFICE OF AMERICAN BEE JOURNAL,
Monday, 10 a. m., October 2, 1882.

The following are the latest quotations for honey and beeswax received up to this hour:

Quotations of Cash Buyers.

CHICAGO.

HONEY—I am paying 7c. for dark and 9c. for light extracted.
BEESWAX—Choice lots are worth 25c. here; bright yellow, 24c.; dark to good, 17@22c.
AL. H. NEWMAN, 923 W. Madison St.

CINCINNATI.

HONEY—The market for extracted honey is very satisfactory. We have received within the last three weeks more than 200 bbls., principally from Louisiana, Mississippi and Florida, and the demand exceeds our experience and expectations. We have sold more than ever at this time of the year. Florida furnishes a honey which equals our Northern clover, and excels all the Southern honey I have had so far. There is some call for comb honey, but we have had no arrivals yet of a choice article. Comb honey brings 16@20c. on arrival; extracted, 7@10c. BEESWAX—Firm at 24@25c. per lb.
CHAS. F. MUTH.

Quotations of Commission Merchants.

CHICAGO.

HONEY—The demand is good for choice white comb honey in 1 and 2 lb. sections, and prices are without material change, 18@20c. being the range of this week's sales. White extracted, in cans, 10 @11c., in kegs and casks, 10c.; dark, 9@9½c. Dark comb honey, 12½@13.
BEESWAX—Yellow, 26c.; dark, 18@22c.
R. A. BURNETT, 165 South Water St.

CLEVELAND.

HONEY—Sells very readily in 1 lb. sections at 21@22c. for best white, and 19@20c. for 2 lb. Second grade, 1 lb. 19@20c. Extracted is selling very slowly again, and some arrivals in bbls. we have been unable to place, asking 11@12c. Extracted in tin pails has sold slowly at 14c.
BEESWAX—25@28c.
A. C. KENDEL, 115 Ontario Street.

SAN FRANCISCO.

HONEY—Receipts were liberal this week, but the bulk of arrivals were in transit to other markets. There is a good inquiry, and prices are firm for fair to choice extracted, and for choice comb. Dark or otherwise inferior comb is not easily placed.
We quote white comb, 18@20c.; dark to good, 12@15c. Extracted, choice to extra white, 8½@9½c.; dark and candied, 7½@8c. BEESWAX—24@30c.
STEARNS & SMITH, 433 Front Street.

ST. LOUIS.

HONEY—Plentiful and dull. Comb lower, at 16 @18c—latter for choice white clover in small packages; strained in round lots at 7c.; extracted in cans at 9@10c.
BEESWAX—Sold fairly at 27c. for prime.
R. C. GREER & CO., 117 N. Main Street.

NEW YORK.

HONEY—No quotations reported.—ED.
BEESWAX—The stock continues light, and prime Southern held up to 30c., with little if any obtainable below 29c. Western, pure, 28@29c.; Southern, pure, 26@30c.
D. W. QUINBY, 105 Park Place

BOSTON.

HONEY—Market active. We quote ¼ lb. combs 30c. per lb.; 1 lb. combs 22@25c.; 2 lb. combs 20@22c. Extracted, in half bbls., 12@14c.
BEESWAX—Prime quality, 25c.
CROCKER & BLAKE, 57 Chatham Street.

We will send Cook's Manual in cloth, or an Apiary Register for 100 colonies, and Weekly BEE JOURNAL for one year, for \$3.00; or with King's Text-Book, in cloth, for \$2.75; or with Bees and Honey, in cloth, \$2.50. The Monthly BEE JOURNAL and either of the above for one dollar less.

Sample Copies of the AMERICAN BEE JOURNAL will be sent free to any person. Any one intending to get up a club can have sample copies sent to the persons they desire to interview, by sending the names to this office.

The Apiary Register.

All who intend to be systematic in their work in the apiary, should get a copy and commence to use it.

For 50 colonies (120 pages).....\$1 00
 " 100 colonies (220 pages)..... 1 50
 " 200 colonies (420 pages)..... 2 00

The larger ones can be used for a few colonies, give room for an increase of numbers, and still keep the record all together in one book, and are therefore the most desirable ones.

Examine the Date following your name on the wrapper label of this paper; it indicates the end of the month to which you have paid your subscription on the BEE JOURNAL.

Advertisements intended for the BEE JOURNAL must reach this office by Saturday of the previous week.

Preparation of Honey for the Market, including the production and care of both comb and extracted honey. A new pamphlet of 32 pages. At the last meeting of the North American Bee-Keepers' Society, we were appointed on a committee to prepare instructions on the Exhibition of Bees and Honey at Fairs; this is also added to the above. Price, 10 cents.

Kendall's Spavin Cure is used from the Atlantic to the Pacific coast.
 40w4t

Advertisements.

THE AMERICAN BEE JOURNAL is the oldest Bee Paper in America, and has a large circulation in every State, Territory and Province, among farmers, mechanics, professional and business men, and is, therefore, the best advertising medium.

NOTICE.

As I do not sell honey on commission, and buy only such kinds as I need in my line of trade, I cannot accept any shipments without previous correspondence.
 I can sell Beeswax of any quality, and will pay the regular market price for it, in any quantity, or exchange for it comb foundation, without previous correspondence.

ALFRED H. NEWMAN,
 40wtf 923 West Madison Street, Chicago, Ill.

GERMAN CARP,

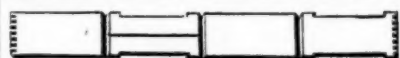
For stocking ponds, Goldfish, Silver Pearl, Fringe Tails, Golden Orfes, etc. For particulars, address
 MUTH & ECKARDT,
 37w8t Mt. Healthy, Hamilton Co., O.

HEADQUARTERS FOR THE
 Golden Italians & Original Albinos,
 BEES AND QUEENS.

Send for Circular. J. M. C. TAYLOR,
 10smtf Lewistown, Frederick Co., Md.

THIS PAPER may be found on file at Geo. P. Rowell & Co.'s Newspaper Advertising Bureau (10 Spruce St.), where advertising contracts may be made for it in NEW YORK.

SECTIONS.



We make a specialty of our "Boss" One-Piece Sections. Patented June 28th, 1881. We have not sold any right to manufacture, therefore we caution the public against buying any One-Piece Sections not bearing our stamp. Send for Price List.
 JAS. FORNCROOK & CO.
 Watertown, Jeff. Co., Wis., Sept. 1, 1882. 36m5t

1882. JOSEPH D. ENAS, 1882.
 (Sunny Side Apiary.)

Pure Italian Queens,

BEES, COLONIES, NUCLEI,

Extractors, Comb Foundation, etc.

Address, Sunny Side Apiary,
 9m8t Napa P. O., Cal.

ALFRED H. NEWMAN,

Dealer in all kinds of

APIARIAN SUPPLIES,

AND

HONEY AND BEESWAX,

923 West Madison Street,

CHICAGO, ILL.

MY ILLUSTRATED CATALOGUE
 sent FREE upon application.

EVERY FARMER AND MILLER

SHOULD have FISHER'S GRAIN TABLES, 192 pages, pocket form; full of useful tables for casting up grain, produce, hay; cost of pork, interest; wages tables, wood measurer, ready reckoner, plowing tables and more miscellaneous matter and useful tables for farmers and others than any similar book ever published. Ask your bookseller for it. Sent post-paid for 40 cents. Agents can make money selling this book.
 For sale at the BEE JOURNAL Office.

AGENTS WANTED to sell Dr. Chase's 2,000 Recipe Book. Sells at Sight. Double your money
 Address Dr. Chase's Printing House, Ann Arbor, Mich.
 3smlyp

THE BRITISH BEE JOURNAL

AND BEE-KEEPER'S ADVISER.

The BRITISH BEE JOURNAL is published monthly, and contains the best practical information for the time being, showing what to do, and when and how to do it. It is edited and published by
 C. N. ABBOTT, Bee-Master,
 School of Apiculture, Fairlawn, Southall, London.

We send the Weekly AMERICAN BEE JOURNAL and the British Bee Journal, both for \$3.50 per annum.

SWEET CLOVER SEED,

This year's crop, all of the white variety, 28c. per pound; \$3.75 per peck; \$10.00 per bushel.

I can fill no more orders for Queens this fall, having sold all I had to spare, leaving many orders unfilled, and with orders still coming in. The advertisement in the Weekly Bee Journal did it.

I. R. GOOD,

5wly Nappanee, Elkhart Co., Ind.

BARNES' PATENT
 Foot Power Machinery

CIRCULAR AND

SCROLL SAWS,



Hand, Circular Rip Saws for general heavy and light ripping, Lathes, &c. These machines are especially adapted to Hive Making. It will pay every bee-keeper to send for our 48-page Illustrated Catalogue.

W. F. & JOHN BARNES,
 No. 2017 Main street,
 Rockford, Winnebago Co., Ill.

FRANCES DUNHAM,

Inventor and Sole Manufacturer of

THE DUNHAM



FOUNDATION
 MACHINE.

Patented Aug. 23d, 1881.

Send for New Circular for January, 1882.

CAUTION.

Having obtained LETTERS PATENT Number 246,099 for Dunham Foundation Machine, making comb foundation with base of cells of natural shape, and side-walls brought up to form an even surface; also on the foundation made on said machine, I hereby give notice to all parties infringing my rights, either by manufacturing said machines or foundation, as well as to all parties purchasing machines as above, other than of my manufacture, that I am prepared to protect my rights, and shall prosecute all infringements to the full extent of the law.
 FRANCES A. DUNHAM,
 23m4t DePere, Wis.

HEADQUARTERS IN THE SOUTH

For the manufacture of

BEE-KEEPERS' SUPPLIES.

Dunham and Root Foundation a specialty. Italian Queens and Bees from March to November.
 Send for my Illustrated Catalogue.

5mtf PAUL L. VIALLO, Bayou Goula, La.

C. Olm's Comb Foundation Machine.

Send for Sample and Circular.

18mtf C. OLM, Fond du Lac, Wis.

Friends, if you are in any way interested in

BEES OR HONEY

We will with pleasure send you a sample copy of the Monthly Gleanings in Bee-Culture, with a descriptive price-list of the latest improvements in Hives, Honey Extractors, Comb Foundation, Section Honey Boxes, all books and journals, and everything pertaining to Bee Culture. Nothing Patented. Simply send your address written plainly, to A. I. ROOT, Medina, O.

Fruit Evaporators,

To be used on a common cooking stove, capacity 3 to 5 bushels per day. Price, complete, \$10; in the flat, partly put together, for \$6. A few agents wanted. For particulars and prices for Evaporators, Queen Bees, etc., address

JOHN H. MARTIN,
 Hartford, Wash. Co., N. Y.

PLYMOUTH ROCKS EXCLUSIVELY

VERY FINE EXHIBITION BIRDS, and
 Trios Mated for Breeding;
 Also, SINGLE BIRDS.

Prices reasonable. Correspondence cheerfully answered.
 WM. H. BUSSEY,
 131 Lake St., CHICAGO, ILL.

EXCELSIOR HONEY EXTRACTORS.



In answer to frequent inquiries for Extractors carrying 3 and 4 Langstroth frames, I have concluded to adopt these two new sizes. The 3 frame basket is in a can of the same size and style as the 2 frame. The 4 frame basket is in the larger can, with the cone or metal standard for the basket to revolve upon, leaving room underneath the basket for 75 or 80 lbs. of honey. It will be complete, with covers, and in every way identical, except in size, with the \$18.00 Extractor, 13x20, which is intended for any size of frame. Excepting with the \$8.00 Extractors, all the different styles have strainers over the canal leading to the honey gate, and movable slides in the Comb Baskets. The \$8.00 and \$10.00 Extractors have no covers.

For 2 American frames, 13x13 inches.....	\$8 00
For 2 Langstroth " 10x18 "	8 00
For 3 " " 10x18 "	10 00
For 4 " " 10x18 "	14 00
For 2 frames of any size, 13x20 "	12 00
For 3 " " 12 1/2 x 20 "	12 00
For 4 " " 13x20 "	16 00

ALFRED H. NEWMAN,
923 West Madison Street, Chicago, Ill.

GOLDEN ITALIAN QUEENS.



1-frame Nucleus, with Tested Queen.....	\$4.50
2-frame Nucleus, with Tested Queen.....	5.00
Full Colony, with Tested Queen, before July 1.....	12.00
Same, after July 1.....	10.00
Tested Queen, before July 1.....	3.00
" after July 1.....	2.50
" per half doz.....	13.50

Address, by Registered Letter or Postoffice Order,
DR. I. P. WILSON,
1wtf Burlington, Iowa.

ELECTROTYPES

Of Engravings used in the Bee Journal for sale at 25 cents per square inch—no single cut sold for less than 50c. **THOMAS G. NEWMAN,**
925 West Madison Street, Chicago, Ill.

HONEY

For the past few years I have made this excellent food my leading article. Having the best established reputation in this city as a dealer in PURE HONEY direct from the Apiaries, enables me to obtain the highest market prices. Your consignments and correspondence respectfully solicited.

R. A. BURNETT, Commission Merchant,
Successor to Conner, Burnett & Co.,
28w13t 161 So. Water Street, Chicago, Ill.

LOOK HERE!

If you want cheap bees and hives to suit, good Cyprian, Albino or Italian Queens, Comb Foundation, all kinds, Section Boxes, and everything a live apiarist needs, send for prices.

Full Colonies and Nuclei a Specialty
with good young Queens. Give me a call, friends, and I will try and please you. (Box 819)

E. T. FLANAGAN, Rose Hill Apiary,
1w1y Belleville, St. Clair County, Ill.

Given's Foundation Press.

The latest improvement in Foundation. Our thin and common Foundation is not surpassed. The only invention to make Foundation in the wired frame. All Presses warranted to give satisfaction. Send for Catalogue and Samples.
1w1y **D. S. GIVEN & C.,** Hoopeston, Ill.

W. Z. HUTCHINSON,

Rogersville, Genesee County, Mich.,
has no Queens for sale now, except Tested Italians at \$1.50 each. But he has plenty of these, and can send them by return mail.
39wtf

AT LULING, TEXAS.

I breed PURE ITALIAN BEES AND QUEENS for sale; manufacture Hives of any style and Comb Foundation. Dealer in Novice Honey Extractors, Bingham Smokers, and everything used by modern bee-keepers. Write for prices. Beeswax wanted.
14w38t **J. S. TADLOCK.**

FLAT-BOTTOM COMB FOUNDATION.



high side-walls, 4 to 16 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS,
Sole Manufacturers,
Sprout Brook, Mont. Co., N. Y.

BEE SWAX.

I wish to buy a quantity of good yellow Beeswax. I am paying 25c. per pound, delivered here, Cash on arrival. Shipments solicited.
To avoid mistakes, the name of the shipper should always be on each package.

ALFRED H. NEWMAN.
923 West Madison Street, CHICAGO, ILL.

Rev. A. SALISBURY

Camargo, Douglas County, Ill.

20 Years Experience in Queen Rearing.

Our Motto is:

—"Low Prices, Quick Returns; Customers Never Defrauded."



Italian Queens.....\$1; Tested....\$2

Cyprian Queens.....\$1; Tested....\$2

Palestine Queens.....\$1; Tested....\$2

Extra Queens, for swarming season, ready, if we are timely notified.

One-frame Nucleus, either Italian, Cyprian or Palestine, \$4; Colony of bees, either Italian, Cyprian or Palestine, 8 frames, \$8. Safe arrival guaranteed.

20c. paid for bright wax. Money Orders on Tuscota, Ill. **PAINE & LADD,**

HALBERT E. PAINE, late Com'r of Patents. STORY B. LADD, Solicitors of Patents and Attys in Patent Cases. 29w13t WASHINGTON, D. C.

BIND YOUR JOURNALS

AND KEEP THEM

NEAT AND CLEAN.



The Emerson Binder

IS THE NEATEST AND CHEAPEST.

Any one can use them. Directions in each Binder.

For Monthly Bee Journal.....50c.
For Weekly Bee Journal.....75c.

Address, **THOMAS G. NEWMAN,**
925 West Madison Street, Chicago, Ill.



Is a 32-page, beautifully illustrated Monthly Magazine, devoted to

POULTRY, PIGEONS AND PET STOCK

It has the largest corps of practical breeders as editor of any journal of its class in America, and is

THE FINEST POULTRY JOURNAL IN THE WORLD.

Volume 12 begins January 1881. SUBSCRIPTION: \$1.00 per year. Specimen Copy, 10 cents.

C. J. WARD, Editor and Proprietor.

182 CLARK ST., CHICAGO

A NEW BEE BOOK!

Bees & Honey

OR THE

Management of an Apiary for Pleasure and Profit; by

THOMAS G. NEWMAN,
Editor of the Weekly Bee Journal.

It contains 160 profusely illustrated pages, is "fully up with the times" in all the various improvements and inventions in this rapidly developing pursuit, and presents the apiarist with everything that can aid in the successful management of the honey bee, and at the same time produce the most honey in its best and most attractive condition. Chief among the new chapters are "Bee Pasturage a Necessity," "Management of Bees and Honey at Fairs," "Marketing Honey," etc. Price, bound in cloth, 75 cents; in paper cover, 50 cents, postpaid.

925 W. Madison Street, Chicago, Ill.

Appreciative Notices.

Carefully prepared for beginners.—Farmers Cabinet, Amherst, N. H.

A very valuable work to those engaged in bee-keeping.—News, Prairie City, Iowa.

We advise all who keep bees to send for this excellent work.—Journal, Louisiana, Mo.

Its chapter on marketing honey is worth many times its cost.—Citizen, Pulaski, Tenn.

Carefully prepared, and of vast importance to bee-raisers.—Indianian, Clinton, Ind.

A neat and abundantly illustrated hand-book of apiculture.—American Agriculturist, N. Y.

New and valuable, and embellished with 109 beautiful engravings.—Democrat, Salem, Ind.

Much practical useful information, in a cheap form.—Daily Standard, New Bedford, Mass.

Contains all the information needed to make bee-culture successful.—Eagle, Union City, Ind.

Just such a work as should be in the hands of every beginner with bees.—News, Keithsburg, Ill.

A valuable work for all who are interested in the care and management of bees.—Democrat, Allegan, Mich.

The most perfect work for the price ever yet produced on the subject of bee-culture.—Anti-Monopolist, Lebanon, Mo.

The engravings are fine. It is gotten up in the very best style, and is cheap at the price.—Farmer, Cleveland, O.

It comprises all that is necessary for successful bee-culture, save experience and good judgment.—Daily Republican, Utica, N. Y.

A manual, containing all the newest discoveries in the management of these little workers.—Plain Dealer, St. Lawrence, N. Y.

Full of practical instruction, that no one who contemplates keeping bees can do without.—Farmers Journal, Louisville, Ky.

Gives minute details for the management and manipulations necessary to make bee-keeping a success.—Col. Valley and Farm.

It embraces every subject that can interest the beginner in bee-culture. The engravings perfectly illustrate the text.—Farm and Fireside, Springfield, O.

Embraces every subject of interest in the apiary, giving very thorough details of the management and manipulations necessary to make bee-keeping a success.—Farm, Longmont, Colo.

Written in an interesting and attractive manner, and contains valuable information for all readers, even though they be not directly interested in the care of bees.—Sentinel, Rome, N. Y.

It is a valuable and practical book, and contains a complete resume of the natural history of the little busy bee, as well as of all that one needs to know in their care and management.—Chicago Herald.

Describes all the newest discoveries in the art, by which the production of delicious and health-giving honey is obtained, as well as how to prepare it for the market in the most attractive shape.—Signal, Napoleon, O.

Contains a vast fund of information in regard to bee-culture. He who would keep abreast of the times must keep posted in all the improvements in his line. We advise all interested to get a copy of this book.—Daily Times, San Bernardino, Cal.

It embraces every subject that will interest the beginner. It describes all the newest discoveries in the art by which the production of delicious and health-giving honey is obtained, as well as how to prepare it for the market in the most attractive form. It is embellished with beautiful engravings, and is the most perfect work of the kind, for the price, that has ever come under our notice.—Farmer, Lancaster, Pa.

A Liberal Discount to Dealers by the Dozen or Hundred.

FOUNDATION

WHOLESALE AND RETAIL.

Dealers in bee-supplies will do well to send for our wholesale prices of Foundation. We now have the most extensive manufactory of foundation in the country. We send to all parts of the United States. We make

ALL STANDARD STYLES,

and our wax is nowhere to be equalled for cleanliness, purity and beauty. Extra thin and bright for sections. All shapes and sizes.

Samples free on request.

CHAS. DADANT & SON,

1wly Hamilton, Hancock Co. Ill.

We now quote an

Advance of 5 Cents per pound

on the PRICES PRINTED IN OUR CIRCULARS, wholesale or retail. 15wtf

INQUIRIES

CONCERNING

THE CLIMATE,

Mines, Manufactories and Commerce

OF

COLORADO,

will be promptly and truthfully answered by private letter, upon sending One Dollar to the

Woman's Industrial Association,

15w6mp 291 Sixteenth St., DENVER, COL.

Advance in Foundation.

The manufacturers of Comb Foundation have advanced the price 5 cents per pound, owing to the increased cost of Beeswax.

Until further notice, the price of all the styles and kinds of Foundation, except the VanDeusen (flat bottom), will be

Advanced 5 Cents per pound, from the advertised price in my Catalogue.

ALFRED H. NEWMAN,

923 West Madison Street, CHICAGO, ILL.

Excelsior Dunham and Vandervort FOUNDATION.

Owing to the large advance in the price of wax, I now quote prices thus: Dunham, 10 to 50 lbs., 42c.; over 50 lbs., 41c.; less than 10 lbs., 44c.; Vandervort, 10 sq. feet to the lb., 1 to 10 lbs., 57c.; 10 to 50 lbs., 54c. No discounts. Circular free.

J. V. CALDWELL,

3wly Cambridge, Henry Co., Ill.

THE CONQUEROR.

Large Smokers need wide shields. Bingham's have them, and springs that do not rust and break, and bellows that sparks and smoke do not enter. The Conqueror has all improvements made to date, and a 3x7 inch stove, and 5x7 inch bellows. Sent postpaid for \$2. Address,

BINGHAM & HETHERINGTON,

13wtf Abnolia, Mich.

Queens and Bees

FOR SALE—200 Untested Italian Queens—single Queen, \$1; half dozen, \$5.50; per dozen, \$10.00.

100 Tested Italian Queens—single Queen, \$2.50; per half dozen, \$13.00; per dozen, \$24.

50 Colonies of Bees, in Gallup frames, cheap.

200 Colonies of Bees, in Langstroth frames in prime condition.

J. H. ROBERTSON,

38wtf Pewamo, Ionia Co., Mich.

New Kegs

FOR HONEY.

In order to satisfy the demand for small packages for Extracted Honey, I have heretofore procured kegs intended for syrup, fish, lard, etc., and in view of this growing trade, I now feel justified in having made to order a **Special Keg**

Designed Expressly for Honey.

These I am obliged to buy in large quantities in order to supply them at popular prices, and procure a package not used for any other purpose. They are made of Norway Pine, and have from 7 to 9 chime hoops on each end.

I have tested a sample keg by filling it DRY with white clover honey, and without the heads being painted.

It neither leaks nor flavors the Honey.

It is not necessary to paint the heads, but when painted I will guarantee them not to leak, and if well scalded, the pine will not flavor the honey.

Capacity, 175 pounds. Price, 80c. each.

The first car load of these kegs will arrive about Sept. 10th, and all orders will receive my prompt attention. The 5 and 10 gallon kegs will be sold, as heretofore, at 40c. and 55c. each, respectively.

ALFRED H. NEWMAN,

923 West Madison Street, CHICAGO, ILL.

Scribner's Lumber and Log Book.

NEARLY A MILLION SOLD. Most complete book of its kind ever published. Gives measurement of all kinds of lumber, logs, and planks by Doyle's Rule, cubical contents of square and round timber, staves and heading bolt tables, wages, rent, board capacity of cisterns, cordwood tables, interests, etc. Standard book throughout United States and Canada. Ask your booksellers for it. Sent for 35 cents post-paid.

For sale at the BEE JOURNAL Office.



65 ENGRAVINGS.

The Horse

BY B. J. KENDALL, M. D.

A TREATISE giving an index of diseases, and the symptoms; cause and treatment of each, a table giving all the principal drugs used for the horse, with the ordinary dose, effects and antidote when a poison; a table with an engraving of the horse's teeth at different ages, with rules for telling the age of the horse; a valuable collection of recipes, and much valuable information.

Price 25 cents.—Sent on receipt of price, by

THOMAS G. NEWMAN,

925 West Madison Street, CHICAGO, ILL.



BINGHAM SMOKERS.

I can sell the above Smokers at MANUFACTURERS' PRICES, by mail or express, at wholesale or retail. All the latest improvements, including the CONQUEROR.

Send for my 32-page Illustrated Catalogue of Bee-Keepers' Supplies of every description.

ALFRED H. NEWMAN,

923 W. Madison, CHICAGO, ILL.

QUEENS--QUEENS

Circulars free. Address,

15w6m **JOS. M. BROOKS,** Columbus, Ind.

The Bee-Keeper's Guide;

OR,

MANUAL OF THE APIARY,

By A. J. COOK,

Of Lansing, Professor of Entomology in the

State Agricultural College of Michigan.

320 Pages; 133 Fine Illustrations.

This is a new edition of Prof. Cook's Manual of the Apiary, enlarged and elegantly illustrated. The first edition of 3,000 copies was exhausted in about 15 months—a sale unprecedented in the annals of bee-culture. This new work has been produced with great care, patient study and persistent research. It comprises a full delineation of the anatomy and physiology of the honey bee, illustrated with many costly wood engravings—the products of the Honey Bee; the races of bees; full descriptions of honey-producing plants, trees, shrubs, etc., splendidly illustrated—and last, though not least, detailed instructions for the various manipulations necessary in the apiary.

This work is a masterly production, and one that no bee-keeper, however limited his means, can afford to do without. It is fully "up with the times" on every conceivable subject that can interest the apiarist. It is not only instructive, but intensely interesting and thoroughly practical.

Read the following opinions of the Book:

All agree that it is the work of a master and of real value.—*L'Apiculture*, Paris.

I think Cook's Manual is the best of our American works.—*LEWIS T. COLBY*.

It appears to have cut the ground from under future book-makers.—*British Bee Journal*.

Prof. Cook's valuable Manual has been my constant guide in my operations and successful management of the apiary.—*J. P. WEST*.

I have derived more practical knowledge from Prof. Cook's New Manual of the Apiary than from any other book.—*E. H. WYNKOOP*.

This book is just what everyone interested in bees ought to have, and which, no one who obtains it, will ever regret having purchased.—*Mich. Far.*

To all who wish to engage in bee-culture, a manual is a necessity. Prof. Cook's Manual is an exhaustive work.—*Herald*, Monticello, Ill.

With Cook's Manual I am more than pleased. It is fully up with the times in every particular. The richest reward awaits its author.—*A. E. WENZEL*.

My success has been so great as to almost astonish myself, and much of it is due to the clear, disinterested information contained in Cook's Manual.—*WM. VAN ANTWERP, M. D.*

It is the latest book on the bee, and treats of both the bee and hives, with their implements. It is of value to all bee-raisers.—*Ky. Live Stock Record*.

It is a credit to the author as well the publisher. I have never yet met with a work, either French or foreign, which I like so much.—*L'ABBE DU BOIS*, editor of the *Bulletin D'Apiculture*, France.

It not only gives the natural history of these industrious insects, but also a thorough, practical, and clearly expressed series of directions for their management; also a botanical description of honey producing plants, and an extended account of the enemies of bees.—*Democrat*, Pulaski, N. Y.

We have perused with great pleasure this code murem of the bee-keeper. It is replete with the best information on everything belonging to apiculture. To all taking an interest in this subject, we say, obtain this valuable work, read it carefully and practice as advised.—*Agriculturist*, Quebec.

This book is pronounced by the press and leading bee-men to be the most complete and practical treatise on bee-culture in Europe or America; a scientific work on modern bee management that every experienced bee-man will welcome, and it is essential to every amateur in bee-culture. It is handsomely printed, neatly bound, and is a credit to the West.—*Western Agriculturist*.

This work is undoubtedly the most complete manual for the instruction of bee-keepers which has ever been published. It gives a full explanation regarding the care and management of the apiary. There is no subject relating to the culture of bees left untouched, and in the compilation of the work Prof. Cook has had the advantage of all the previous knowledge of apiarists, which he uses admirably to promote and make popular this most interesting of all occupations.—*American Inventor*.

PRICE—Bound in cloth, \$1.25; in paper cover,

\$1.00 by mail prepaid. Published by

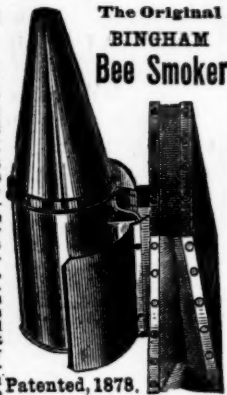
THOMAS G. NEWMAN,

West Madison Street, CHICAGO, ILL.

"RED TAPE!"

Who will be the first to copy?
25,000 IN USE.

If you buy the Original Patent Bingham Bee Smoker, you will aid the inventor of improved bee smokers—get the best, that never go out—always please—never is complained of—the standard of excellence the world over—better and handsomer this season than ever before. Price per mail, postpaid, from 65 cts. to \$2. Our patents cover all the smokers that will burn sound stove-wood, or do not go out. If you buy our smokers and honey knives first, you will have to buy no others.



PRICES:
Handed to Customer. By Mail, Postpaid.

Wide shield Conqueror, 3 inch	\$1.75	\$2.00
Large Bingham Smoker (wide shield), 2 1/2 inch	1.50	1.75
Extra Bingham Smoker (wide shield), 2 inch	1.25	1.50
Plain Bingham Smoker, 2 inch	1.00	1.25
Little Wonder Bingham Smoker, 1 3/4 inch	50	65
Bingham & Hetherington Honey Knife, 2 inch	1.00	1.15

To sell again, apply for dozen or half-dozen rates.

Send for free description and testimonials to,
BINGHAM & HETHERINGTON,
17wtf
Abronia, Mich.

Sweet Clover**AND OTHER SEEDS.**

Having a large stock of the new crop of Alsike, White and Sweet Clover Seeds, I can fill orders at \$30c. per pound, \$4 per peck, or \$15 per bushel.

Also, all other SEEDS for HONEY PLANTS,
Send for my Catalogue.

ALFRED H. NEWMAN,
925 West Madison Street, Chicago, Ill.

PURE HOLY-LAND QUEENS.

I make a specialty of rearing pure Holy Land Queens, and have now more than 100 colonies in their purity. All Queens bred from D. A. Jones' imported Queens. Dollar Queens, before June 20, \$1.25 each; after that date, single Queen, \$1.00; 6 for \$5.00; 12 or more, 75 cents each; Warranted Queens, 25 cents more each. Tested Queens, \$2.50 each; Italian Queens, same price.

I. R. GOOD,

5w1y Nappanee, Elkhart County, Ind.

Bright Italian Queens. 200 NUCLEI.

Having filled all my orders, I can now send Queens by return mail. My customers say I send the nicest they get.

J. T. WILSON,

36wtf Mortonsville, Woodford Co., Ky.

Muth's Honey Extractor,

Square Glass Honey Jars, Tin Buckets, Langstroth Bee Hives, Honey Sections, etc., Apply to

C. F. MUTH,

976 and 978 Central Ave., CINCINNATI, O.

Send 10c. for Practical Hints to Bee-Keepers.

1w1y

DUNHAM COMB FOUNDATION—40c.
per pound; extra thin and bright, 10 sq. ft. to the lb. 48c. Send for samples. Wax worked 10c. per lb. F. W. HOLMES, Coopersville, Mich. 13w1y

MENDELSSOHN PIANO CO'S.**PIANOS**

\$850 Square Grand Piano for only \$245.

PIANO STYLE 32 Magnificent rosewood case elegantly finished, 3 strings, 7 1-3 Octaves, full patent cantante agraffes, our new patent overstrung scale, beautiful carved legs and lyre, heavy serpentine and large fancy moulding, full iron frame, French Grand Action, Grand Hammers, in fact, every improvement which can in any way tend to the perfection of the instrument, has been added.

Our price for this instrument, boxed and delivered on board cars at New York, with fine Piano Cover, Stool, **\$245.**

Reduced from our late wholesale factory price, \$225, for 60 days only, to have this beautiful Piano introduced. This is now, by far, the greatest bargain ever offered the musical public. Unprecedented success! Tremendous demand for this style! Order at once. This Piano will be sent on 15 days' test trial. Please send reference if you do not send money with order. Cash sent with order will be refunded and freight charges paid by us both ways if Piano is not just as represented. Several other special bargains: Pianos, \$160 up. Over 15,000 in use, and not one dissatisfied purchaser. Handsome illustrated Catalogue mailed free, giving the highest testimonials ever awarded any manufacturer. Every Piano fully warranted for 5 years.

SHEET MUSIC 1/2 price. Catalogue of 3,000 choice pieces sent for 3c. stamp.

MENDELSSOHN PIANO CO.,
218mlv Box 2958, New York.

EARS FOR THE MILLION!

Foo Choo's Balsam of Shark's Oil

Positively Restores the Hearing, and is the Only Absolute Cure for Deafness Known.

This Oil is abstracted from a peculiar species of small **White Shark**, caught in the Yellow Sea, known as *Carcharodon Rondeletti*. Every Chinese fisherman knows it. Its virtues as a restorative of hearing were discovered by a Buddhist Priest about the year 1410. Its cures were so numerous and many so seemingly miraculous, that the remedy was officially proclaimed over the entire Empire. Its use became so universal that for over 300 years no Deafness has existed among the Chinese people. Sent, charges prepaid, to any address at \$1.00 per bottle.

HEAR WHAT THE DEAF SAY!

It has performed a miracle in my case. I have no unearthly noises in my head, and hear much better. I have been greatly benefitted. My deafness helped a great deal—think another bottle will cure me.

"Its virtues are UNQUESTIONABLE and its CURATIVE CHARACTER ABSOLUTE, AS THE WRITER CAN PERSONALLY TESTIFY, BOTH FROM EXPERIENCE AND OBSERVATION. Write at once to HAYLOCK & JENNEY, 7 Day Street, New York, enclosing \$1. and you will receive by return a remedy that will enable you to hear like anybody else, and whose curative effects will be permanent. You will never regret doing so."—EDITOR OF MERCANTILE REVIEW.

To avoid loss in the mails, please send money by REGISTERED LETTER.

Only Imported by **HAYLOCK & JENNEY,**
(Late HAYLOCK & CO.)

Sole Agents for America, **7 Day St., New York.**
20w1y

Books for Bee-Keepers.

Sent by mail, postpaid, on receipt of price, by
THOMAS G. NEWMAN,
925 West Madison Street, CHICAGO, ILL.

Bee-Keeper's Guide; or, Cook's Manual of the Apilary.—Entirely re-written, elegantly illustrated and fully "up with the times" on every subject of bee-culture. It is not only instructive, but intensely interesting and thoroughly practical. The book is a masterly production, and one that no bee-keeper, however limited his means, can afford to do without. Cloth, \$1.25; paper cover, \$1.

Quinby's New Bee-Keeping, by L. C. Root.—The author treats the subject of bee-keeping so that it cannot fail to interest all. Its style is plain and forcible, making all its readers realize that its author is master of the subject.—\$1.50.

Novice's ABC of Bee-Culture, by A. I. Root.—This embraces "everything pertaining to the care of the honey-bee," and is valuable to beginners and those more advanced. Cloth, \$1.25.

King's Bee-Keepers' Text-Book, by A. J. King.—This edition is revised and brought down to the present time. Cloth, \$1.00.

Langstroth on the Hive and Honey Bee—This is a standard scientific work. Price, \$2.

Blessed Bees, by John Allen.—A romance of bee-keeping, full of practical information and contagious enthusiasm. Cloth, 75c.

Bees and Honey, or Management of an Apilary for Pleasure and Profit, by Thomas G. Newman.—Third Edition. "Fully up with the times," including all the various improvements and inventions. Chief among the new chapters are: "Bee Pasturage as Necessity," "Management of Bees and Honey at Fairs," "Marketing Honey," etc. It contains 160 pages, and is profusely illustrated. Price, bound in cloth, 75c.; in paper covers, 50c., postpaid.

Bienen Kultur, by Thomas G. Newman, in the GERMAN language. Price, in paper covers, 40 cents, or \$3 per dozen, postpaid.

Bzierzon Theory—presents the fundamental principles of bee-culture, and furnishes the facts and arguments to demonstrate them. 15c.

Honey, as Food and Medicine, by Thomas G. Newman.—This pamphlet discourses upon the Ancient History of Bees and Honey, the nature, quality, sources, and preparation of Honey for the market; Honey as food, giving recipes for making Honey Cakes, Cookies, Puddings, Foam, Wines, etc.; and Honey as Medicine, with many useful Recipes. It is intended for consumers, and should be scattered by thousands, creating a demand for honey everywhere. Published in English and German. Price for either edition, 6c. per dozen, 50c.

Wintering Bees.—This contains the Prize Essays on this subject, read before the Centennial Bee-Keepers' Association. Price, 10c.

Preparation of Honey for the Market, including the production and care of both comb and extracted honey, and instructions on the exhibition of bees and honey at Fairs, etc., by T. G. Newman. Price, 10c.

The Hive I Use—Being a description of the hive used by G. M. Doolittle. Price, 5c.

Extracted Honey; Harvesting, Handling and Marketing.—A 24-page pamphlet, by Ch. & C. P. Dadant, giving in detail the methods and management adopted in their apilary. This contains many useful hints.—Price 15c.

Bee Pasturage as Necessity, by Thomas G. Newman.—Giving advanced views on this important subject, with suggestions what to plant, and when and how: 26 engravings. Price, 10c.

Practical Hints to Bee-Keepers, by Chas. F. Muth; 32 pages. It gives Mr. Muth's views on the management of bees. Price, 10c.

Swarming, Dividing and Feeding Bees.—Hints to Beginners, by Thomas G. Newman. Price 5 cents.

Bees in Winter, with instructions about Chaff-Packing, Cellars and Bee Houses, by Thomas G. Newman. Price 5c.

Kendall's Horse Book.—No book could be more useful to horse owners. It has 35 engravings illustrating positions of sick horses, and treats all diseases in a plain and comprehensive manner. It has recipes, a table of doses, and much valuable horse information. Paper, 25c.

Chicken Cholera, by A. J. Hill.—A treatise on its cause, symptoms and cure. Price, 25c.

Moore's Universal Assistant, and Complete Mechanic, contains over 1,000,000 Industrial Facts, Calculations, Processes, Trade Secrets, Legal Items, Business Forms, etc., of vast utility to every Mechanic, Farmer and Business Man. Gives 200,000 items for Gas, Steam, Civil and Mining Engineers, Machinists, Millers, Blacksmiths, Founders, Miners, Metallurgists, Assayers, Plumbers, Gas and Steam Fitters, Ironworkers, Goldsmiths, Metal and Wood Workers of every kind.

The work contains 1,016 pages, is a veritable Treasury of Useful Knowledge, and worth its weight in gold to any Mechanic, Business Man, or Farmer. Price, postage paid, \$2.50.